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JANUARY, 1953

Telephone and Management Engineer

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THE NATIONAL TELEPHONE MAGAZINE

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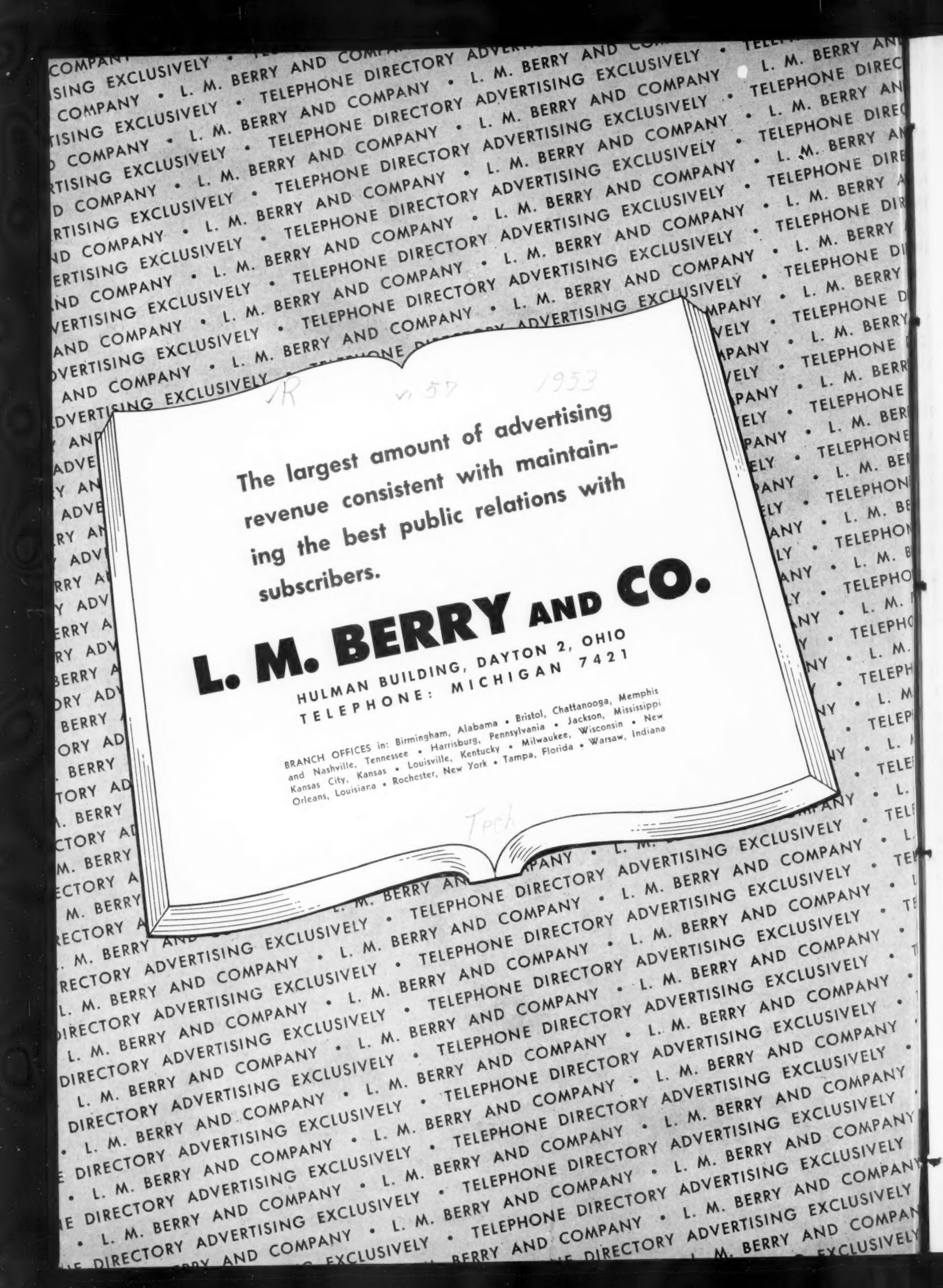
- Modern Central Office Maintenance, by John S. Reed
- Washington Bureau Reports, by Roland Davies and Fred Henck
- New Ideas at Work • Management Forum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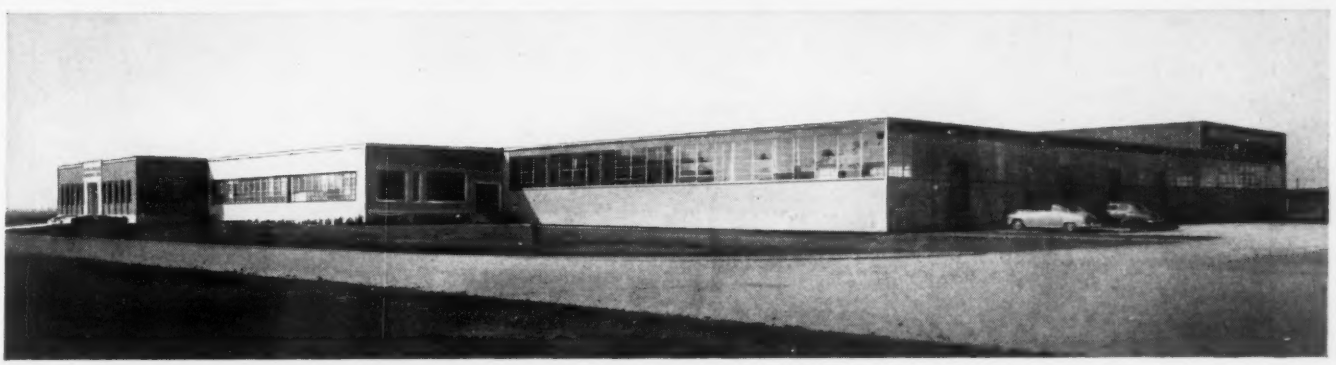
TO MEET INDUSTRIAL BATTERY DEMAND



Front and side views of Gould's new Kankakee, Ill., plant

GOULD'S NEW KANKAKEE PLANT which went into production on November 10 is the 21st Gould plant in the United States and Canada. Devoted entirely to the manufacture of storage batteries for industry, it gives Gould the additional capacity necessary to meet the increased demand for Gould batteries in all parts of the country. Thanks to these new facilities, Gould customers can expect even faster service than before.

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The National Telephone Magazine

Telephone Engineer and Management

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JANUARY, 1953 VOL. 57 NUMBER 1

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FRONT COVER

Paul R. Parsons, general manager of the Rhinelander (Wis.) Telephone Co., was host to group attending recent Area Clinic conducted by Wisconsin State Telephone Assoc. See story on page 70. — (Photo by Jim Ward, General Tel. Co. of Wis.)

Published monthly by Telephone Engineer Publishing Corp. 7720 Sheridan Road - Phone Rogers Park 4-3040 - Chicago 26, Illinois.

Volume 57, Number 1. Published monthly by Telephone Engineer Publishing Corp. Office of Publication, Rochelle, Ill. Executive and Editorial Office. 7720 Sheridan Road, Chicago, Ill. Subscriptions: U. S., Cuba, Mexico, $3.00 per year; Canada $3.50; in all other countries, $5.00 Single copies, U.S.A. 35 cents. Entered as second class matter at the post office at Rochelle, Ill. under the act of March 3, 1879.

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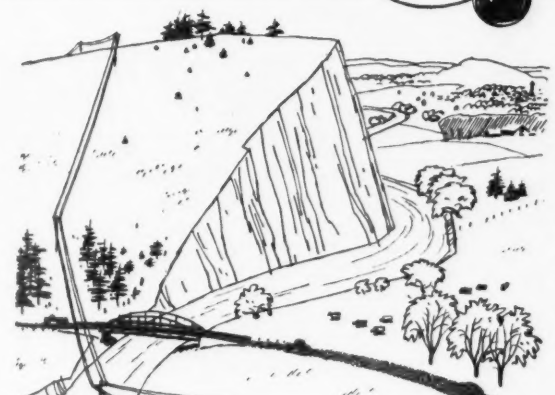

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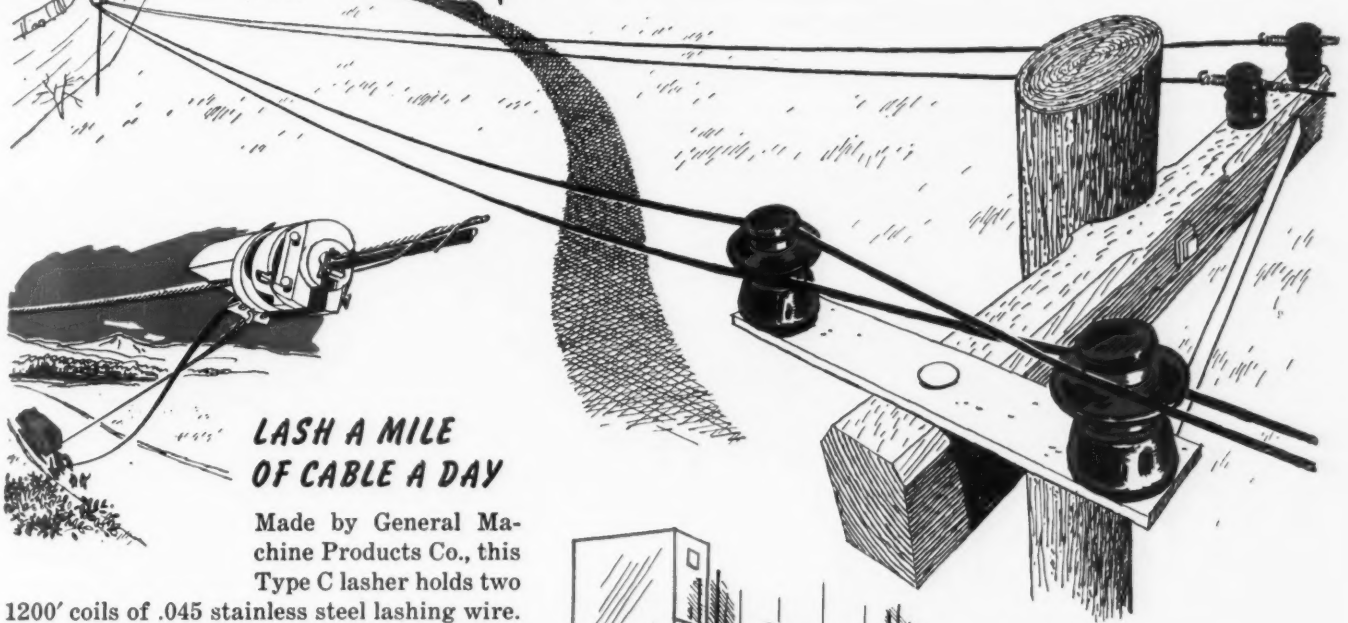

LASH A MILE OF CABLE A DAY

Made by General Machine Products Co., this Type C lasher holds two 1200′ coils of .045 stainless steel lashing wire. Fewer re-threadings and one-man operation permits lashing with stainless at virtually the same cost as .091 galvanized — reduces cable damage and cuts maintenance, too. Lashers ... .045 stainless (in coils to fit any machine) ... .091 and .065 galvanized lashing wire . . . messenger wire . . . tie wire — you can order them all *via Graybar*.

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Your near-by Graybar office maintains up-to-date files on all of the telephone supplies you may require. Covering performance data, specifications, and prices, this material is available to help you prepare job estimates and set up job schedules. That's why — for any telephone application — contact your local Graybar Representative and make the most of your "unseen" file. 203-221.

EVER THINK OF SAVING DECIBLES?

You can't put them in the bank, *but* you *can* cash them in on improved transmission and service. Extensive tests show that — compared to standard B.B. — Graybar-distributed Crapo HTL-85 and HTL-135 cut transmission losses by 5% (expressed in decibles per mile of voice circuit).

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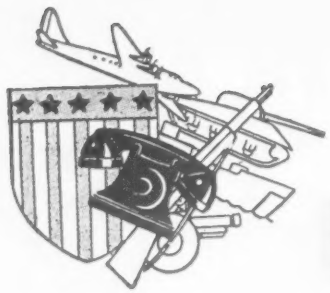

Across The EDITOR'S DESK

CONGRATULATIONS to *A. B. Jordan*, Tampa, Fla., on his being made a Life Member of the Independent Telephone Pioneer Association. His certificate was sent to him during the latter part of 1952 although he had been eligible with 50 years of service, for some time. As most of our readers know Mr. Jordan has spent most of his many years of service in the Independent segment of the industry with the Peninsular Telephone Company.

HAM CUNNINGHAM, popular executive secretary of the New York State Telephone Association has informed us that COLLIERS magazine will run a feature article on the Independent telephone industry in its issue of January 24. Ham's friend *Bill Davidson*, associate editor of COLLIERS, gathered some of his background material among Independents in New York state. Davidson attended the November 15 cut-over ceremonies of the Finger Lakes Telephone Corporation, Marcellus, N. Y.

WILLIAM M. DRIGGS, new general manager of the Texas Telephone Co., Sherman, was honored in the December issue of TEXAS TELEPHONE TOPICS and welcomed to Texas. Bill served for 8 years with the Illinois Telephone Co., Bloomington, and was general plant superintendent when he was transferred to Texas. His service to the industry includes many terms as chairman of the Plant Committee of the United States Independent Telephone Association and as a member of the Plant Committee of the Illinois Telephone Association.

THE INDEPENDENT Telephone Men's Committee of Tax Equality, a special committee of the National Tax Equality Association, has been formed with *Wm. C. Henry*, Bellevue, Ohio, as Chairman. A letter was addressed to all telephone executives dated December 12 informing the industry of this new Committee and advising them of the active work outlined for the Committee. Enclosed was the first of five or six leaflets the Committee will publish to be distributed free and postpaid to those asking for them. The problem of TAX-FREE competition from rural telephone cooperatives was the immediate cause for the formation of the Committee. With the emphasis of the REA now being placed upon the formation of tax-free telephone cooperatives this Committee was organized to acquaint the industry "with the facts of this unjust competitive situation." The committee may be addressed at Suite 1027, 231 S. LaSalle St., Chicago 4, Ill.

FOR SOME WEEKS, now, radio station WGY, Schenectady, N. Y., has invited leading citizens of the WGY listening area to participate in a public service program known as "*I Speak For Democracy*" broadcast. These well-informed people, active in their own communities in the things which should interest good citizens, as well as in their respective vocation, have the opportunity to tell a vast radio audience just what America and Democracy mean to them.

According to the New York State Telephone Association NEWSLETTER, *Louis H. Meyer*, a director, member of the executive committee and past-president of the association, and president of the General Telephone Co., of Upstate N. Y. Inc., recently appeared on the program as president of the Johnstown (N. Y.) Chamber of Commerce.

Space does not permit us to quote the full text of Mr. Meyer's testimony in the cause of our way of life but we understand his remarks inspired confidence and hope that these United States may be preserved for those who follow and that "we may add something worthwhile for the generations to come."

SEVERAL OF THE real pioneers of the telephone business are wintering in Florida this year. *Mr. and Mrs. George Rodormer* will winter at the Miami Biltmore Hotel at Belleair, Fla. again this year. They have forsaken Arizona as their favorite spot although George still holds one of the golf records in putting tournaments there. *Mr. and Mrs. E. C. Blomeyer* have also left the cold winds of Chicago and are in residence at their Palm Beach home at 145 Chilean Ave. *Mr. and Mrs. W. F. Benoist*, formerly of Chicago, are living in Palm Beach and are neighbors of the Blomeyers.

Telephone Engineer

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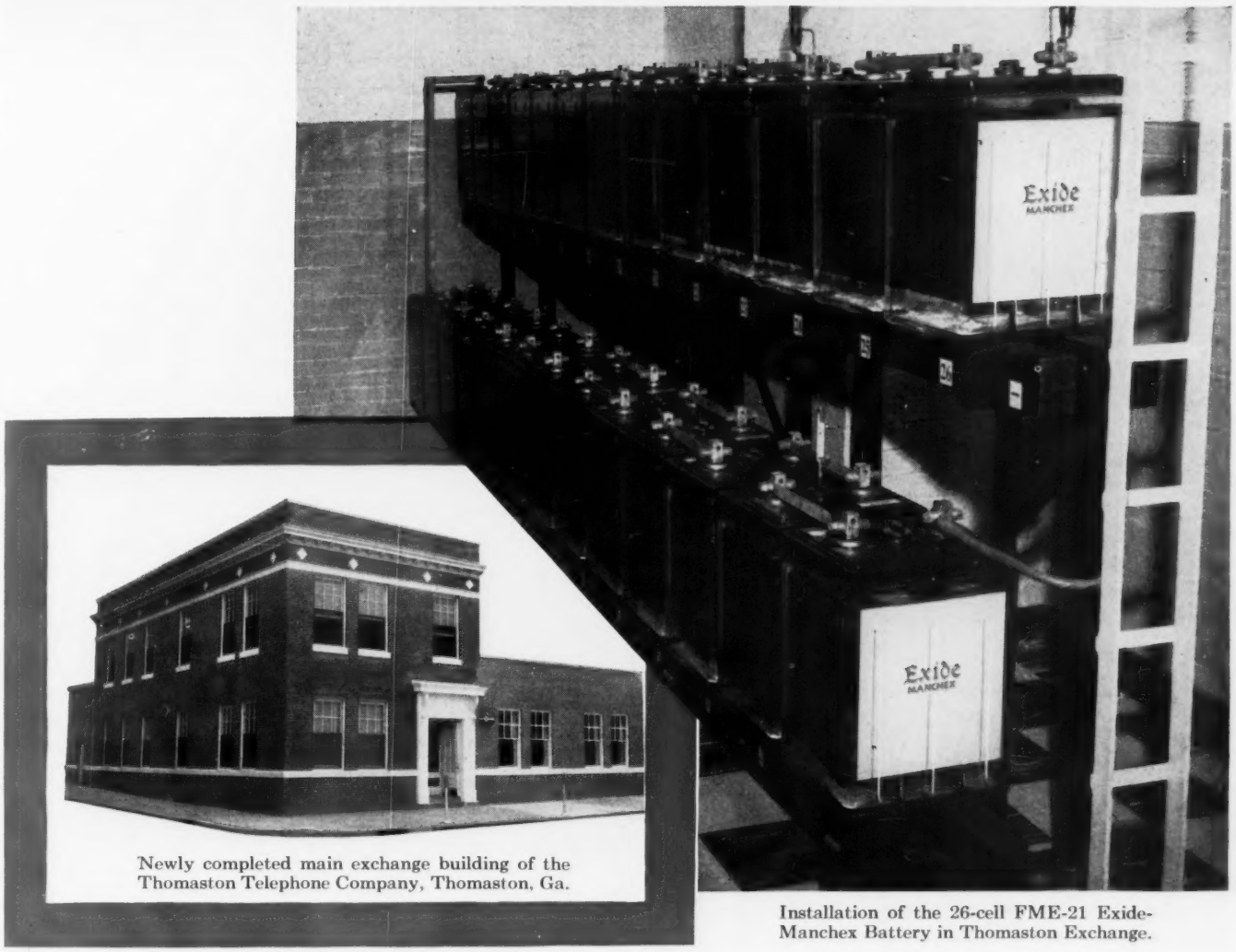

Newly completed main exchange building of the Thomaston Telephone Company, Thomaston, Ga.

Installation of the 26-cell FME-21 Exide-Manchex Battery in Thomaston Exchange.

Another new automatic system powered by

Exide-Manchex BATTERIES

Telephone companies in few cities, large or small, can match the progress made by the Thomaston Telephone Company. In this busy industrial community of west-central Georgia, the number of stations has almost doubled within the last eight years—2000 in 1944, 3500 in 1952 with a waiting list of approximately 500.

But number of subscribers is only one measure of the company's growth. Construction of a new telephone exchange building has been completed. An automatic system has been installed. Other equipment is reported to be "the finest that research could develop or money could buy." Among this equipment are Exide-Manchex batteries, assurance of:

POSITIVE OPERATION: Dependable performance for all telephone battery requirements—central office and private branch exchange equipment.

ADEQUATE RESERVE POWER for emergencies beyond normal needs.

LOW OPERATING COST: Extremely low internal resistance.

LOW MAINTENANCE COSTS: Water required about twice a year. No change of chemical solution during life of battery.

LOW DEPRECIATION: Sturdy, long-life construction, which includes the exclusive manchester positive plate.

GREATER CAPACITY in a given amount of space avoids over-crowding of equipment.

• • •

Various sizes and types of Exide Batteries, up to 100 ampere hours capacity, are available in plastic containers.

THE ELECTRIC STORAGE BATTERY COMPANY
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"Exide" and "Manchex" *Reg. T.M. U.S. Pat. Off.*

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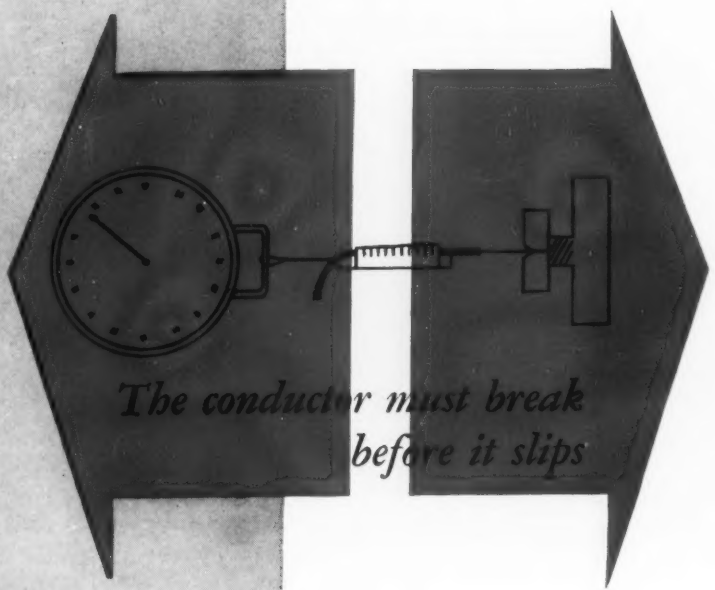
ALPHADUCT

P clamp adhesion test



P clamps are the most widely used method of attaching drop wire to buildings. Lest you may worry about a P clamp causing slipping of the insulation or jacket on Alphaduct Neoprene Jacketed Drop Wire — read about this Alphaduct service test. This test is made daily.

A sample of Alphaduct wire is inserted in a P clamp with 12 inches of the wire projecting from the top of the clamp. The bail of the clamp is then inserted in the upper jaws of a tensile testing machine, and the end of the wire is stripped free of jacket and insulation and inserted in the other end of the machine.

The jaws of the machine are then gradually separated until the conductor breaks. The conductor must break before there is ANY slipping of either the jacket or the insulation.

Don't have any worries about a little old P clamp hurting ALPHADUCT drop wire. Try Alphaduct. It's dated by a color coded thread so you can see for yourself how long it lasts, how much money it saves.

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THE LINDSAY TELEPHONE SUPPLY CO., CLEVELAND, OHIO

Tid Bits

Company's Secret Weapon

A FEW PUBLIC-phone users are apt to be a bit reluctant about paying toll charges after completing a call. One woman had made a lengthy toll call, hung up and apparently left the premises. At least there was no answer to the operator's persistent ringing. Deciding to give it one more try, she rang again and, surprisingly, the same voice answered. Upon being told the amount due, the customer dropped the required coins. "Now that I've paid," she said meekly, "would you please open the door?"

Emergency

IN JACKSONVILLE, ARK., a customer called long distance and told the operator, "This is an emergency call. I want to get a divorce."

Numbers

IN DALLAS, TEXAS, a subscriber asked the business office supervisor if he could have number HA-1899. "That's the year I was born," he explained. Unfortunately that number was already taken. Undaunted, the same customer returned a few days latter and asked if he coud have HA-7747. This, too, had a sentimental connotation. It spelled "Harris" on the dial. "That," he added significantly, "was my mother's third husband's name."

Couldn't Be Truer

"MY MACHINE won't work. It's got mice in it," the young woman told a Houston, Texas, teletype repairman. Dubiously, he went to investigate. Lifting the cover, he was startled when several mice scurried in all directions. Mused the repairman, "I guess it's true what they say about the customer always being right."

Practically Human

A COLUMBUS CUSTOMER dialed what he believed to be a recorded time of day announcement. But when he dialed incorrectly the telephone operator answered and attempted to explain. The angry man ignored the girl's explanation, shouting, "You can't argue with me, you're just a recording," and hung up.

NEWSLETTER
TELEPHONE ENGINEER

Fortnightly TELEPHONE ENGINEER ★ TELEPHONE ENGINEER AND *Management*

ON THE 1st OF EACH MONTH ON THE 15th OF EACH MONTH

NEWSLETTERS *on Alternate Weeks*

January 1, 1953

Dear Sir:

At the present rate of growth, Bell System will install its 40,000,000th telephone fairly early in 1953, it appeared Jan. 2, on basis of material in year-end report of American Telephone & Telegraph Co. Pres. Cleo F. Craig . Reporting the addition of one new telephone for every four seconds of each working day in 1952, Mr. Craig announced there were about 39,350,000 Bell System telephones in service at end of year. During year, increase in telephones in service was 1,900,000, not including those of companies in which AT&T holds minority stock interests.

Bell companies spent about one and quarter billion dollars on new construction in 1952 ,installed 2,000,000 miles of long-distance circuits, & cleared 850,000 requests for upgrades in service. In rural areas, about quarter of million telephones were added, about half of them on lines with more than 4 parties; by the end of year about 94% of rural telephones were of either dial or common battery operation.

* * *

Concluding that proposed transaction will be of advantage to persons served & in public interest, FCC Examiner H. Gifford Irion issued initial decision Dec. 31 recommending approval of Indiana Bell Telephone Co.'s purchase of "east side" properties of the John T. Detchon estate.

* * *

During 1952, Rural Electrification Administration (REA) approved farm telephone loan allocations almost equal to combined total of 2 previous years of program, REA reported Dec. 31 in year-end roundup. Approved the past year was about $52 million in telephone loan allocations, compared to total of $54 million for first 2 years.

Year also brought large-scale construction of REA-financed telephone facilities for first time, agency said. Many telephone borrowers completed long period of signing up subscribers, engineering design & construction, & put into operation 18 of 20 automatic dial systems now in service. REA said that since middle of Nov. an average of more than one new system a week has been put into service.

* * *

Development of electronic telephone device which can understand & intelligently react to spoken numbers was announced Jan. 5, by Bell Telephone Laboratories, which said special circuit—named "Audrey" as contraction of "automatic digit recognizer"—automatically determines which of 10 numbers from 1 through zero has been spoken into ordinary

telephone. In its present form, "Audrey" responds by flashing appropriate light, but it could equally well control other operations such as dialing mechanisms, according to Laboratories, which added that it is hoped eventually to add other sounds to device's vocabulary.

* * *

Jack Werner, chief of FCC Common Carrier Bureau since June, 1950, submitted his resignation to Commission Dec. 31 to become effective at close of business Jan. 6, when he will join Washington law firm of Freedman & Levy. Commission, in letter from Chairman Paul A. Walker, accepted his resignation "with sincere regrets" & expressed "deep appreciation for the splendid services" of Mr. Werner in directing bureau.

Curtis M. Bushnell, assistant chief of bureau, who has served as acting chief during Mr. Werner's absences from his office in past, will be acting chief until Commission selects successor to Mr. Werner.

* * *

HIGHLIGHTS: – Nebraska Central Tel. Co. plans completion of dial installation at Shelton, Neb., exchange in April, 1953. . . Stafford-Jadis Tel. Co., Stafford, Minn., plans to metallicize lines. . . H. J. Hopkins named manager of Sigourney & Keota (Ia.) exchanges of Central Iowa Tel. Co. Mr. Hopkins was formerly gen. mgr. of Farmers Mutual Tel. Co., Jesup, Ia. . . General Tel. Co. of the Northwest, Spokane, Wash., established dial exchange with 100 stations at Cusick, Wash. Wynot (Neb.) Tel. Co. completed conversion of St. Helena (Neb.) exchange to automatic operation. . . Consolidated Tel. Co., Covington, Ky., plans $25,000 exchange building. . . Richfield (Ida.) Tel. Co. completed expansion project. . . Bayes Jordan, Carrollton, Ga., named mgr. of Horry Tel. Co-op., Inc., Conway, S. C. . . Southern Bell Tel. & Tel. Co. will purchase Harlem (Ga.) Tel. Co. . . Summerville (Ga.) Tel. Co. completed expansion project & installation of new switchboard. . . Texas Tel. Co., Sherman, offered 25,000 shares of 6% cumulative preferred stock at $20 per share for public sale. Proceeds are to go for improvement & expansion program. . . Farmers near Tabor, S. D., organized Co-op. Tel. Co. & plan construction of own system. . . Illinois Central Tel. Co. installed new 3-position switchboard at Clinton (Ill.) exchange.

Plans for $71,000 expansion & improvement program—including installation of dial system—were announced by J. R. Carter, new owner of Huntsville (Mo.) Tel. Co. . . Blair (Neb.) Tel. Co. changed over to dial operation. . . Andre J. Perry, pres. of First Fond du Lac (Wis.) National Bank, accepted a directorship of General Tel. Co. of Wisconsin. Central Tel. Co., LaCrosse, Wis., converted Currie, Minn., exchange to automatic operation. . . Former community-owned Beechwoods (Pa.) Tel. Co. taken over by Bell Tel. Co. of Pa. . . $100,000 contract for new central office equipment for 5 exchanges was awarded by Independent Tel., Inc., Hoven, S.D. . . Assaria (Kans.) Tel. Co. incorporated Directors are: Frank Burch, John McCormick, Norris Peterson, Arnold Lindblad, & Carl Rundquist.

Ray Smith

Ray W. Smith, Editor

PHILCO

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COMMUNICATIONS SYSTEMS

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Philco *Advanced Design* Microwave Systems are unsurpassed in reliability, performance and economy. They are designed to give you the greatest value for your communications dollar!

Finest quality components, conservatively rated, insure long life and economy of operation and maintenance. Years of production experience enable Philco to produce microwave systems for the lowest possible cost consistent with highest quality.

Philco *Advanced Design* Microwave is flexible. The broadband microwave channel may be divided to carry up to 24 simultaneous 2-way telephone conversations . . . or be further divided for telegraph, teletype, telemetering, signaling or supervisory circuits. Future expansion can be easily accomplished with no loss of original investment.

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PHILCO CORPORATION

INDUSTRIAL DIVISION

PHILADELPHIA 34, PENNSYLVANIA

Another step of progress and expansion of the Union Telephone Co. in Owosso, Mich. became a reality when the Accounting Department of the General offices took over its new offices on the first floor of the Masonic Temple building. The space is part of that leased by the company for 10 years from the Masonic Temple Association. Included in the lease is the entire first and second floors. The second floor will be occupied by the Owosso executive offices as soon as they can be remodeled, which will be about the first of the year. T. A. Saunders, company president, advises that the present move gives the company space to start the consolidation of all accounting personnel of the General offices in Owosso, and will provide space to meet the continuing rapid growth of the Union company.

Industry News Briefs

General Tel. Net Up For First 10 Months

CONSOLIDATED NET income of the General Telephone Corp. and its subsidiaries for the first 10 months of 1952 amounted to $6,743,000, compared with $4,538,000 in the same period of 1951, it was reported by the company last month. Consolidated net for the 12 months ended Oct. 31, 1952, was $7,00,000, against $5,388,000 for the year ended Oct. 31, 1951.

Telephones In Service Pass 47 Million Mark

A TOTAL OF 47,420,000 telephones were in service in the United States as of the close of the third quarter of 1952, a summary of telephone statistics made available last month revealed. Of the total, 38,804,000 were operated by the Bell System, not including 1,244,000 served by the Southern New England and Cincinnati & Suburban Bell Telephone Cos.

Thus, including the two companies in which the American Telephone & Telegraph Co. holds minority interests, the Bell System now has passed the 40,000,000 mark in telephones served.

Bell System expenditures during the nine-month period ended Sept. 30 for new construction were about $902,000,000, the report said, while total operating expenses, including taxes, were $2,634,556,000. AT&T had 1,189,200 shareholders at the close of the third quarter of 1952.

Average daily exchange conversations, industry-wide, totaled 167,400,000, of which 137,304,000 were over Bell System telephones. Toll conversations totaled 6,600,000 an average day, of which 6,273,000 were Bell System.

At the close of the quarter, the Bell System had 685,000 employees, including 100,000 persons employed by the Western Electric Co. and 7900 working for the Bell Telephone Laboratories.

Attorneys Adopt Resolution On Highway Construction

THE NATIONAL Institute of Municipal Law Officers, the organization of city attorneys of most of the municipalities in the nation, is the latest to adopt a resolution calling for payment to non-railroad utilities of their costs resulting from relocation of plant to accommodate federal-aid highway construction.

The law officers, at a convention in Louisville, Ky., said that the "federal-aid highway program has caused, and will continue to cause, municipally and publicly owned utilities to expend large sums to move and relocate utility facilities to accommodate federal-aid projects, thus imposing an onerous and unwarranted burden on users of utility service."

They urged, since railroads are repaid in such instances but other utilities are "discriminated against," that Congress enact legislation "providing that municipally-owned utilities be relieved of the costly burden of relocating utility facilities when caused by federal-aid projects."

Potter Named Acting NPA Bureau Chief

C.W.POTTER, vice president and general manager of the Indiana Bell Telephone Co., who has been serving on "loan" with the National Production Authority's (NPA) Communications Equipment Division (CED) in Washington since last Aug. 1, has been named acting assistant administrator of NPA to head its Textile, Leather and Specialty Equipment Bureau.

In his new post, Mr. Potter will be responsible for the administration of

10 NPA divisions, including the CED, which he has headed since early Sept. as director. He will be succeeded in that position by Ralph F. Lucier, president and general manager of the United Utilities, Inc., companies in Indiana and Ohio, who has been deputy director of CED since early Sept. and will now become acting director.

Mr. Potter first joined the CED as a consultant last Aug. and became director when E. C. Roys, now vice president of the General Telephone Co. of Michigan, completed a six-month tour with the government.

Mr. Lucier, who joined the CED as a consultant on Aug. 18 and shortly afterward became deputy director, is a veteran of 32 years in the telephone field. He began his career with the United Telephone Co. of Kansas, a predecessor of the Southwestern Bell Telephone Co., after attending Kansas State College. He became vice president and general manager of United Utilities' Indiana and Ohio group in 1935, and five years later became president and general manager, with headquarters in Warsaw, Ind.

Carlos Lazo Named Mexico Communications Minister

CARLOS LAZO, a 38-year-old professor in the School of Architecture at the National University of Mexico, has been named Minister of Communications in the cabinet of Mexico's new President Adolfo Ruiz Cortines. Mr. Lazo is the youngest member of the cabinet. In Mexico's governmental organization, the ministry of communications is also responsible for the nation's public works programs, thus accounting for the selection of an architect for the cabinet position.

Tele. Ass'n. Of Canada Holds Annual Meeting

AN ENTHUSIASTIC and interesting 23rd Annual Meeting of the Telephone Association of Canada was held recently in Charlottetown, Prince Edward Island. Representatives from every province in the Dominion were introduced and welcomed by Association President C. B. Diplock. All were present for the five-day business sessions which were high-lighted by many carefully prepared papers on a variety of timely subjects. Question and answer periods, debates, and Round Table discussions were carried on enthusiastically, and sometimes heatedly, when debatable points were at issue.

The officers elected to govern the Association's activities for the coming year are: Peter Millar, commissioner and general manager of the Manitoba Telephone System, president; A. Higgins, deputy minister and general manager of the Alberta Government Telephones, vice-president; W. P. Montgomery, staff-assistant, the Bell Telephone Co. of Canada, secretary-treasurer.

Pennsylvania Independent Plans Sale to Bell Of Pa.

IN ANOTHER situation in which the service area of a small Independent telephone company has outgrown its ability to meet demands, the Bell Telephone Co. of Pennsylvania last month asked for FCC approval of its proposed acquisition of the Franklin Telephone & Telegraph Co., serving 137 subscirbers in five townships of Bucks County, Pa.

Bell of Pennsylvania pointed out in the application that the Franklin company's service, predominately multi-party, was acceptable when the area was primarily rural, but that now adjoining sections are industrialized and the Franklin company's territory is developing as a mixed farming and residential section.

In addition, the Franklin company, attempting to meet the service demands and to offset severe sleet storm damage in 1948, installed a complete new unattended dial switchboard and 40,000 feet of cable. This was done on borrowed money, and since the plant additions are working at full capacity, and demand for additional service continues high, the company stockholders have decided that they cannot liquidate their indebtedness and do not wish to add to their equity investment, Bell of Pennsylvania said.

Consequently, they prefer to sell the property to Bell of Pennsylvania, already providing service in the larger communities in the vicinity. Purchase price negotiated is $85,000.

Fisher Resigns Post As ICC Chairman

WALTER T. FISHER, chairman of the Illinois Commerce Commission (ICC), announced Dec. 4 that he had resigned, effective Jan. 15. A Republican, Fisher was appointed by Gov. Stevenson, a Democrat, in 1949. His term was to expire in 1955.

In a five-page letter to Governor Elect William G. Stratton, Fisher said the commission, "in contrast to previous Democratic and Republican administrations," has been free from outside influences and "has increased in general respect." Commission employes decreased from 225 to 150 during his chairmanship, he added.

Although Stratton has said he would not consider commission appointments until after his inauguration, George R. Perrine, Aurora attorney, has been mentioned as a possible successor to Fisher. A Stratton supporter and former member of the Republican state central committee, Perrine was an assistant commerce commissioner in former Gov. Green's administration.

Court Partially Upholds Appeal In Tax Case

THE APPEAL of the Chesapeake & Potomac Telephone Co. of Virginia to a Newport News, Va., ordinance levying a 3% gross receipts tax was partially upheld last month by the Virginia Supreme Court of Appeals.

Virginia's highest court ruled that a lower court was right in sustaining the city's argument that the telephone company did not have a case for injunctive relief, but that the lower court erred in ordering the C&P suit dismissed. It remanded the case to the Newport News Circuit Court.

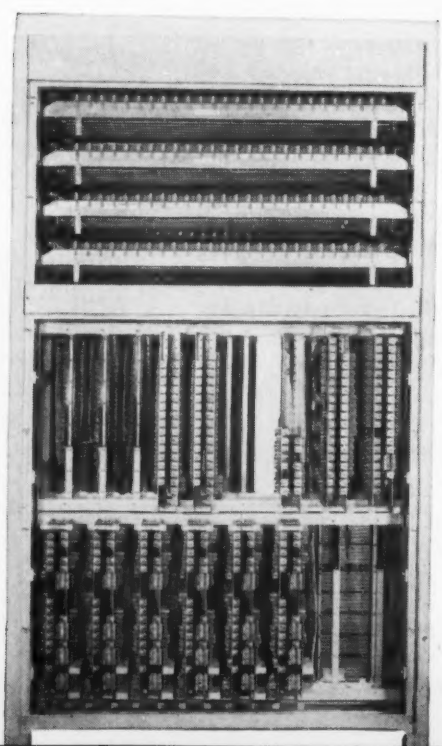
C&P charged that the tax is grossly discriminatory as compared with those on other public utilities, and said it was not a tax measure but "a coercive act" passed to force the company to bid on a new franchise which would require it to pay Newport News 3% of its gross receipts from exchange service for a period of 20 years.

Dingman Named V.P. Of Bell Laboratories

SELECTION of James E. Dingman, vice president-operations of the Bell Telephone Co. of Pennsylvania and the Diamond State Telephone Co., as vice president and general manager of the Bell Telephone Laboratories, and the naming of John C. Longstreth, vice president and general manager of the Western Area for Bell of Pa. to succeed Mr. Dingman in

(Please turn to page 77)

Another Exchange Cuts Over to KELLOGG



"Modern" is the word for the Forest City Exchange of the Central Iowa Telephone Company, Cedar Rapids! . . . For KELLOGG has been privileged to install the latest, most modern, most efficient dial switching equipment ever manufactured—KELLOGG *Crossbar!*

KELLOGG *Crossbar* is ruggedly built—and built for the future! It is unmatched for speed, capacity, economy and over-all superiority — *Superiority* — PROVED BY USE!

KELLOGG SWITCHBOARD AND SUPPLY COMPANY

L-to-R, J. J. McIntosh, General Mgr., Kenneth L. Henderson, General Plant Sup't., J. L. Trevillion, Kellogg Rep., inspecting Kellogg Crossbar installation at Forest City Exchange.

Crossbar

Outstanding features of KELLOGG *Crossbar* include Minimum Maintenance Costs — Drawer Mounted Switches Individually Covered, Lower Installation Costs, No Multiple Wiring, All Frames Wired at Factory, PBX Service, Maximum Expansion, Instantaneous Seizure of Paths, High Traffic Capacity, Long Life. But it's *results* that count! And KELLOGG *Crossbar* invariably results in better, more efficient service to subscribers — lower operating and maintenance costs and *larger assured profits* for *Crossbar* users. Get the facts — all the facts — and you'll surely specify KELLOGG *Crossbar!*

FREE

This interesting, instructive brochure, explaining in detail the manifold benefits to be derived from KELLOGG Crossbar.

KELLOGG ... an IT&T Associate

An Associate of International Telephone and Telegraph Corporation

Sales Offices: 79 W. Monroe St., Chicago 3, Illinois

MAIL COUPON TODAY!

Kellogg Switchboard and Supply Company, Dept. _____
79 W. Monroe St., Chicago 3, Ill.

Please send me your "*Crossbar . . . Kellogg's Achievement of the Century.*"

NAME_____ POSITION_____

ADDRESS_____

CITY_____ STATE_____

SUPPLIES OF Proven Dependability

• Shipment of guaranteed line supplies made from distribution center nearest you . . . Kellogg's warehouses located in Chicago, Kansas City, Dallas, San Francisco and St. Paul.

The following nationally-known manufacturers of supplies for the independent telephone field are participating in the the 1952 Kellogg Co-operative Campaign.

American Creosote Works, Inc.

Ansonia Electrical Company

John Bean Division
Food Machinery and Chemical Corp.

Bishop Manufacturing Co.

E. D. Bullard Company

Continental Cross-Arm Co.

Cook Electric Company

Copperweld Steel Company

The Electric Storage Battery Co.

Everstick Anchor Company

General Insulated Wire Works, Inc.

Gould-National Battery, Inc.

W. A. Hammond Drierite Company

Indiana Steel & Wire Company

Kester Solder Company

Lorain Products Corporation

National Carbon Company
a Division of Union Carbide and Carbon Corporation

National Telephone Supply Co.

Newman Manufacturing Company

Paragon Electric Company

Ray-O-Vac Company

Raytheon Manufacturing Company

Reliable Electric Company

M. M. Rhodes & Sons Company

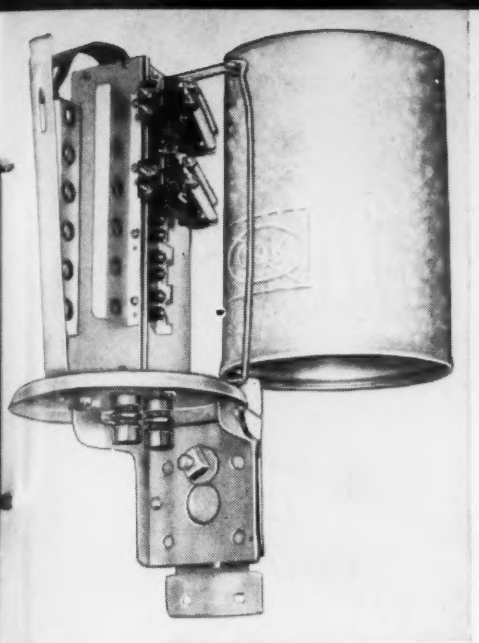
Schauer Manufacturing Corp.

Telkor, Inc.

Vulcan Electric Company

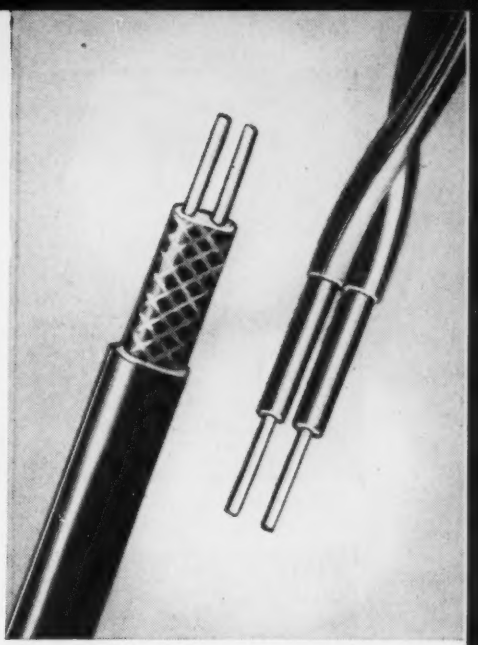
Regulates—Compensates. Flotrol Battery Chargers assure continuous power savings by low standby losses combined with high overall efficiency. Compensation for variation in input voltage is automatic, practically instant. LORAIN PRODUCTS CORP.

Your Battery Problems Are Solved when you put Gould Plante' and Flote' Batteries to work. Unique features of design cut maintenance and charging costs, lengthen life and reduce replacements. Made by GOULD-NATIONAL BATTERIES, INC.



Added Versatility For use with plastic cable, the S-20V Cable Terminal is made with 2 cable entrances when one cable is required, pipe plug is inserted in other entrance. Order couplings and plugs later to conform to cable layout. COOK ELECTRIC CO.

For Use with Cable Spinners, is Crapo Galvanized Steel Lashing Wire. Heavily-galvanized; .091″ diameter, comes in 325-ft. coils. "Stainless-Steel" Lashing Wire is also available in .045″ and 0.65″ diameters. INDIANA STEEL & WIRE COMPANY.



Lasts 30% Longer! Long service life and lo plant costs go hand-in-hand with the insta lation of ENDUPRENE—The Neopren Drop Wire available in Copperweld an bronze. Flexible, easy to handle. GENERA INSULATED WIRE WORKS, INC.

The Expanding Plates and Spreader Arms of everstick Anchors insure 100% safety and maximum holding power under excessive strain. Ribbed base plate allows anchor to be locked solidly on rod. Quickly installed. Made by EVERSTICK ANCHOR CO.

Drier Than A Desert! The sure way to dry splices in lead covered cables is to sprinkle Drierite Dessicant granules in among the conductors. This W. A. HAMMOND DRIERITE COMPANY product will not harm the sheath, conductors or insulation.

Use John Bean Versatile Power Sprayers for eco nomical chemical control of weeds on tel ephone right-of-ways. Model shown abov can be drawn by jeep, passenger car, ligh truck or tractor. JOHN BEAN DIVISION Food Machinery and Chemical Corp.

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KELLOGG SWITCHBOARD AND SUPPLY COMPANY • 6000 W. 51st Street, Chicago 38, Illinois
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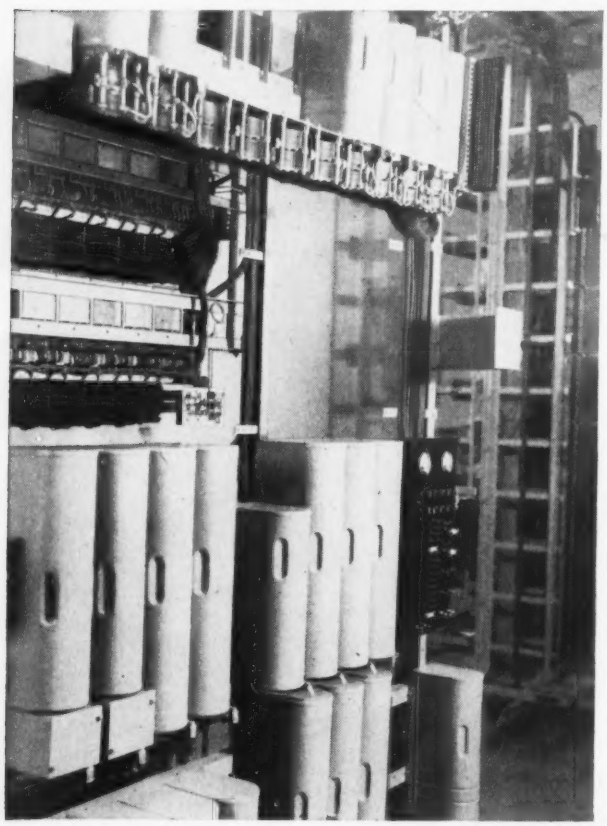
1663 Mission Street, SAN FRANCISCO 3, CALIF.
410 No. Syndicate Ave., "Midway Area", ST. PAUL, MINNESOTA
BRANCH OFFICES: 406 South Main Street, LOS ANGELES 13, CALIF.
720 S. W. Washington St., PORTLAND 5, OREGON

Exterior view of the Telephone Exchange Building at Newcastle, Ontario.

EASE "Growing-up" PAINS with STROWGER AUTOMATIC SYSTEMS



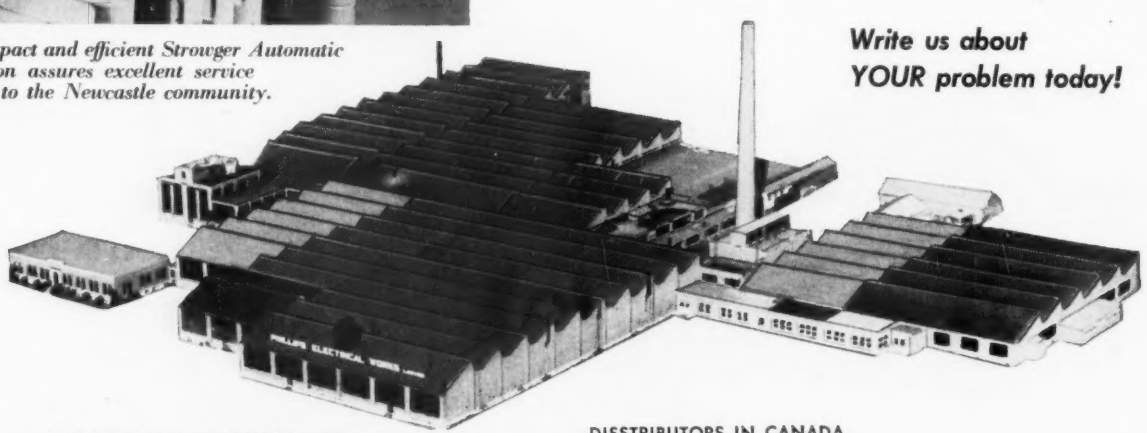
This compact and efficient Strowger Automatic installation assures excellent service facilities to the Newcastle community.

In Newcastle, Ontario, this STROWGER AUTOMATIC installation provides for the easy and economical expansion of telephone services that a growing population demands.

Initial units of this equipment can be supplied to meet the needs of the smallest systems. As the need for expansion arises, additional units may be added to provide a step-by-step growth in service facilities tailored to the "growing-up" needs of a community.

To clients wishing to install a STROWGER AUTOMATIC system, we offer the advantages of complete advisory and engineering services. These services assure practical assistance in ironing out pre-installation problems and follow through until the system is functioning smoothly.

Write us about YOUR problem today!



MANUFACTURED IN CANADA BY

Phillips
ELECTRICAL WORKS LIMITED
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DISSTRIBUTORS IN CANADA
AUTOMATIC ELECTRIC (CANADA) LIMITED
1035 WEST VAN BUREN STREET, CHICAGO 7, U.S.A.

EXPORT DISTRIBUTORS
INTERNATIONAL AUTOMATIC ELECTRIC CORP.
26 HOLLINGER ROAD, TORONTO 13, CANADA

Inaugurate a Change in *Your* Directory Advertising

Whether you like it or not, you're a publisher in control of a valuable advertising medium. Space in your directory is a "must" for business, industry and the professions in your service area. Are you satisfied with the way your directory advertising is being sold? Does your advertising revenue show up in your profit picture? Maybe your directory just has gotten too big to be handled by 1932 methods. It may be time for a change to the modern and complete Loomis directory advertising service.

KNOW-HOW TO SOLVE YOUR DIRECTORY PROBLEMS

"Where to Call"

• 724 cities and towns in 22 states are served by the 287 directories that retain Loomis services.

LOOMIS ADVERTISING COMPANY

FT. WAYNE, IND.
229 E. Berry St. . . . EAstbrook 3477

ST. LOUIS, MO.
506 Olive . . . GArfield 3700

KANSAS CITY, MO.
810 Baltimore . . . HArrison 1270

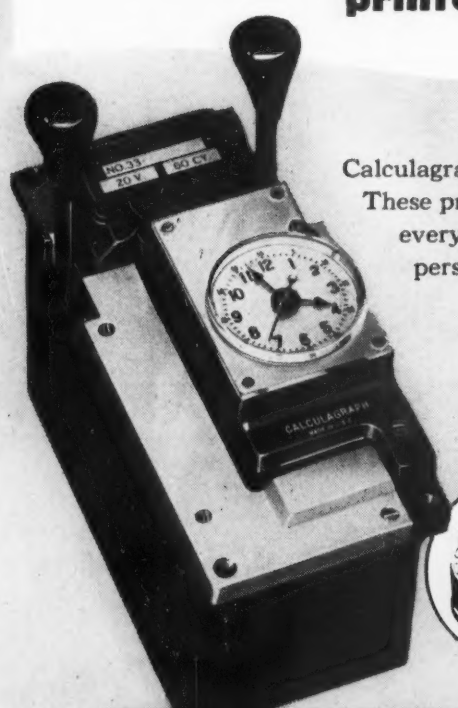
UPPER DARBY (Phila.), PA.
6908 Market St. . . . ALlegheny 4-3763

OMAHA, NEBR.
Omaha Nat'l Bank Bldg. . . . ATlantic 0188

If your toll call revenues depend on PENCIL work!

CALCULAGRAPH

is one sure way to collect all the revenue due with accurate, automatically calculated, printed toll time records



Calculagraph printed elapsed time records are accurate to the second. These precise printed records assure collection of all the revenue due every toll call. Automatically computed, they relieve switchboard personnel of time-consuming detail work that slows switchboard service. Calculagraph is the engineered, revenue-vital equipment that no exchange—large or small—can afford to overlook. Available for switchboard or portable mounting, they are fully described in four illustrated catalogs. Write for yours, now, on company letterhead.

COMPLETELY ACCURATE TO THE SECOND
AUTOMATICALLY COMPUTES ELAPSED TIME
PRINTS THE RECORD FOR PERMANENT FILING
FACILITATES SWITCHBOARD SERVICE
OPERATES SILENTLY

CALCULAGRAPH COMPANY · INC

HARRISON • NEW JERSEY

THE STANDARD FOR ACCURACY SINCE 1892

For faster, safer clearance that lasts for years

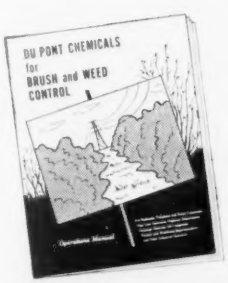
Kill Brush with Du Pont Ammate®

Many users report one spray with Du Pont "Ammate" kills brush so thoroughly that repeat sprays are not needed for years.

In most cases, when the original spray job is done well, brush is kept under control with nothing more than occasional spot sprays starting five or more years later. This assures lower cost brush control with less work for your maintenance crews or custom sprayers.

Here's why "Ammate" works so well.

- **Kills roots of brush as well as tops, yet allows low-growing natural cover to come back.**
- **Control lasts for years, saves labor of hand cutting or annual spraying.**
- **Reducing to a minimum the hazard of damage by spray drift.**
- **Not hazardous to operators, livestock or wildlife. Nonflammable.**



Free illustrated booklet describes how to control brush in rights of way with Du Pont "Ammate." For your copy, write Du Pont, Grasselli Chemicals Dept., Wilmington, Del.

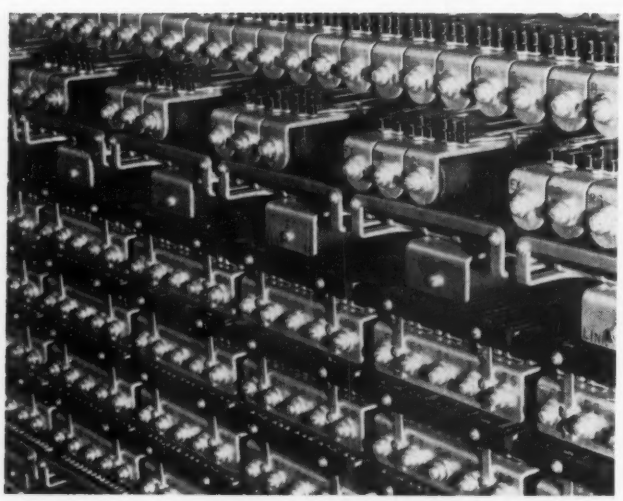
On all chemicals always follow directions for application. Where warning or caution statements on use of the product are given, read them carefully.

DU PONT
REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
...THROUGH CHEMISTRY

Messages by Relay...

still the swiftest communication of the era!



Relay runners of ancient times provided the swiftest means then known of conveying a news bulletin, an order for togas, or a love note from one community to another. For today's news, business or love messages, the most practical fast communication still is based on relays . . . modern electrical relays which can span a county or a continent faster than you could say "Jack Mercury".

With all of the fabulous progress since those footsore days, nothing yet devised excels the combined simplicity, speed and dependability of relays for the practical everyday telephony which comprises the nerve center of our modern world. In automatic communication no one excels North, originators of All-Relay telephone systems. There's nothing simpler, nothing that will give you greater assurance of serving *and pleasing* subscribers than

NORTH *All-Relay Exchanges*

NORTH

THE NORTH ELECTRIC MANUFACTURING COMPANY

Originators of ALL RELAY Systems of Automatic Switching

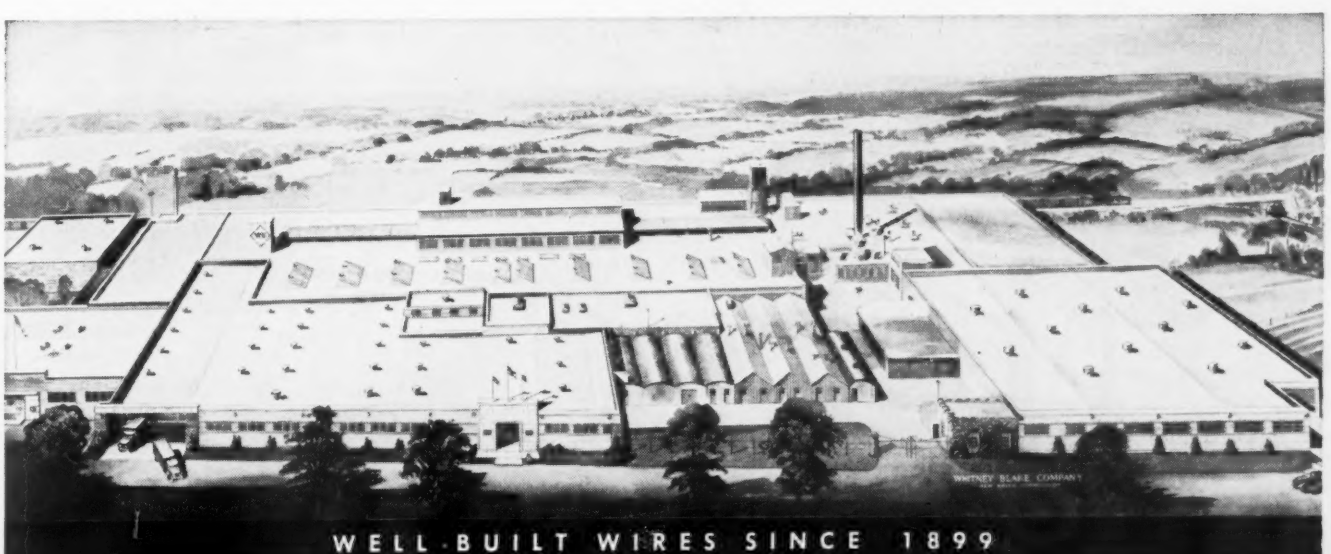
655 South Market Street, Galion, Ohio, U.S.A.

People...

Behind the Whitney Blake products that serve you faithfully are the people who make them possible . . . people who know their jobs, perform them honestly and take pride in their skill and craftsmanship.

On them we've built our reputation for careful research, broad-visioned development and high quality. Only because of them can we give the same type of people in the Independent Telephone Industry the materials they need to maintain a sound reputation for Service.

With a product or a service it's the people involved who make it great.



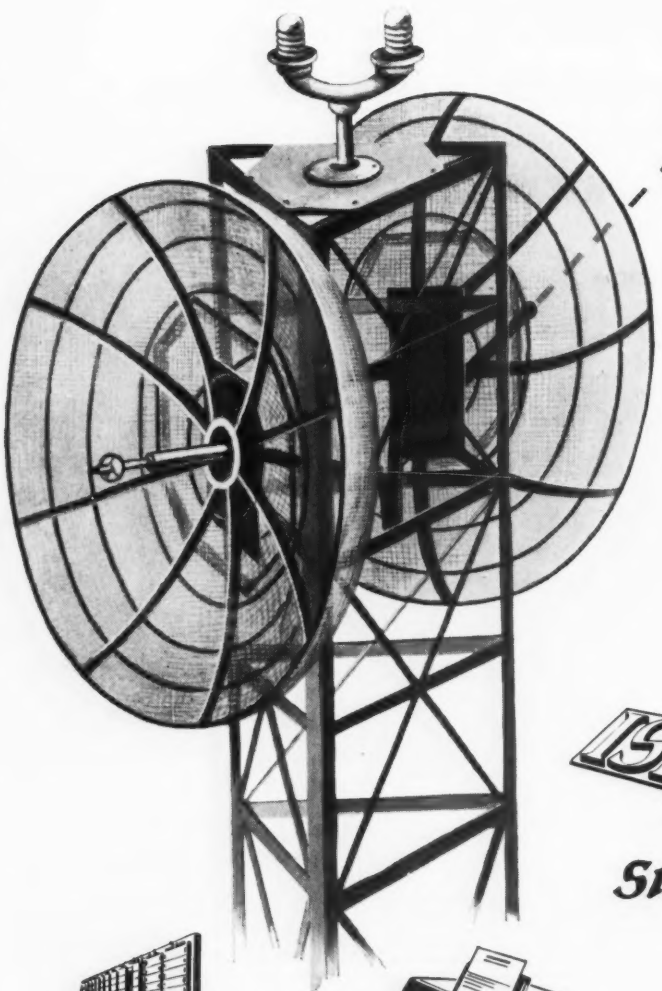
WELL-BUILT WIRES SINCE 1899

WHITNEY BLAKE COMPANY

NEW HAVEN 14, CONNECTICUT

Now comes MICROWAVE

. . . the communication system of the future for LATIN AMERICA



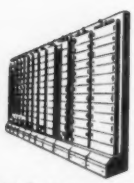
Ready today through ISE

Microwave radio relay systems are revolutionizing communications—by eliminating wire lines. Microwave provides dependable communication between points separated by jungles, forests, waterways, and mountainous areas—and *stays in service* regardless of the storms that so often play havoc with wire circuits. Developed originally by International Telephone and Telegraph Corporation, microwave in its most advanced form is available now through ISE, an IT&T associate. Look to ISE for the finest in microwave—for the finest in communications equipment of every kind.

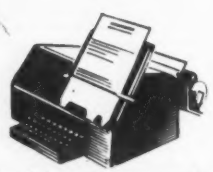
ISE
an IT&T Associate

International Standard Electric Corporation

67 Broad Street, New York 4, N. Y., U.S.A.

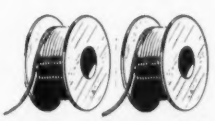


Central telephone exchange equipment, for installations of any size.



Teleprinters for automatic transmission of written messages.

Radio aids to air navigation . . . complete airport communications and lighting.



Cable, power tubes, conduits, transformers—equipment for every electric power need.

works like copper

IN VOICE OR SIGNAL TRANSMISSION---

IN LONG, RUST-RESISTING LIFE---

AND IT'S *more than twice as strong*

IT'S Copperweld LINE WIRE

TRADE MARK

Good electrical transmission and consistent, trouble-free service are essential in communication and signal lines. You can depend on Copperweld* Line Wire to provide these advantages—vitally important in building customer good-will and in reducing operating costs.

Because its thick copper covering and strong steel core are inseparable, Copperweld Line Wire has the rust-resisting life of solid copper. It retains its original voice and high frequency transmission properties which are better than any other high-strength conductor.

Copperweld's permanent high strength assures greater safety for long spans, with the stamina to resist heavy ice and wind loads. Construction costs are reduced because fewer poles, accessories and man-hours are required.

When you build overhead lines, remember that Copperweld is the only wire that will give you the high conductance and long life of copper plus the rugged strength of steel. Write us today for engineering assistance . . . there's no obligation.

*Trade Mark

COPPERWELD STEEL COMPANY
Glassport, Pa.
SALES OFFICES IN PRINCIPAL CITIES

for safer long spans---

Copperweld Line Wire

TRADE MARK

SOLD BY LEADING DISTRIBUTORS

With her car stalled, this motorist *really* appreciates a pay-station where she can call for help. The crossroads grocer is glad to have her use the "pay telephone" too, for it doesn't tie up his store line. In emergencies and for routine calls, *everybody* likes paystations!

Paystations are proving profitable everywhere. They're quickly accepted by the community, and speedily pay for themselves—in stores, bus terminals, hotel lobbies, restaurants, gas stations, and all public places. Progressive companies have proved that the average paystation earns four times as much revenue as a subscriber station.

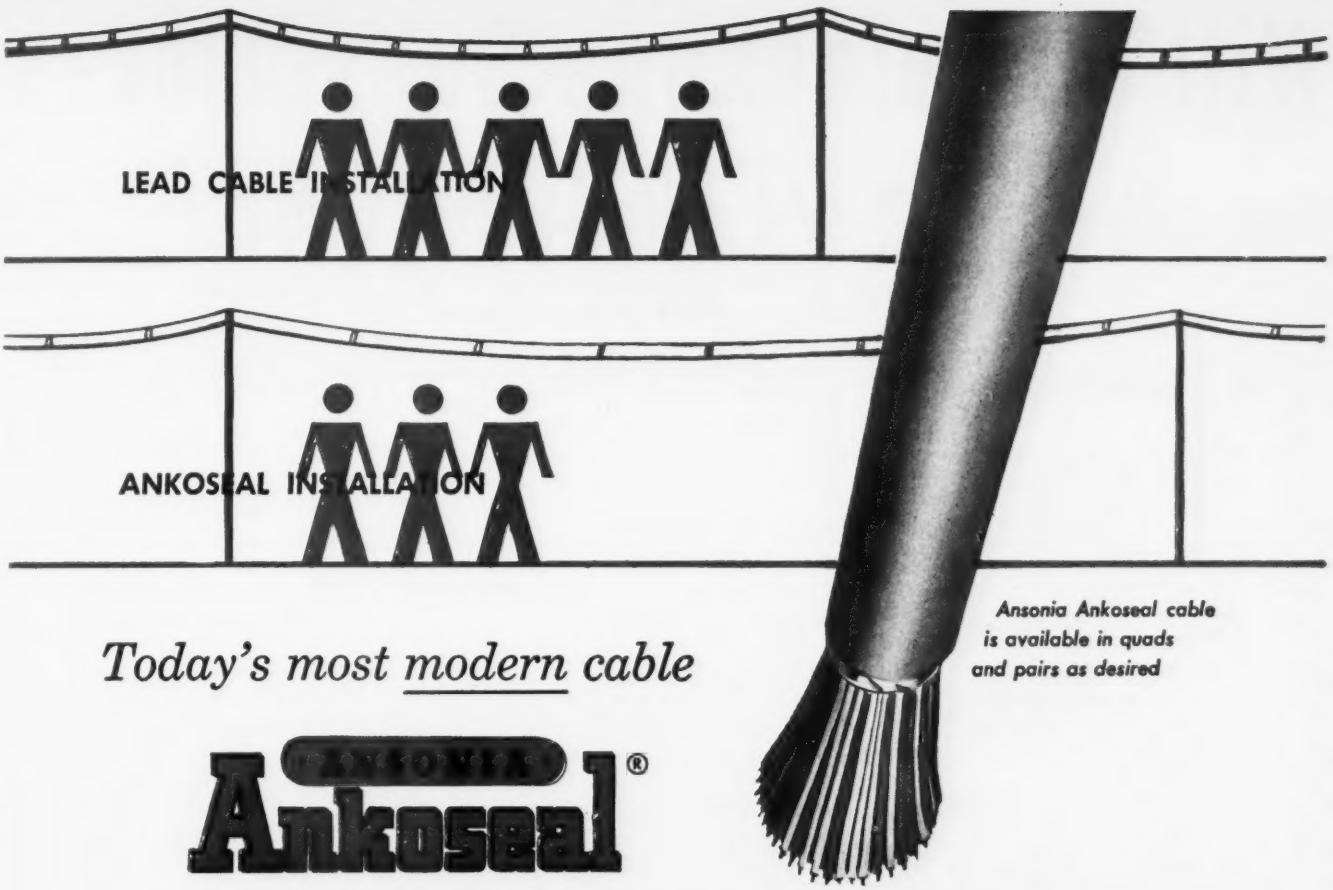
Product of the Telephone Specialty Department of

AUTOMATIC ELECTRIC

Originators and Developers of the Strowger Step-by-Step "Director" for Register-Sender-Translator Operation . . . Machine Switching Automatic Dial Systems
Makers of Telephone, Signaling and Communication Apparatus . . . Electrical Engineers, Designers and Consultants

Distributors in U. S. and Possessions: Automatic Electric Sales Corporation
Export Distributors: International Automatic Electric Corporation
1033 West Van Buren Street, Chicago 7, U. S. A.

Write today for Circular 1724, illustrating profitable 10-cent paystations, and kits to convert paystations to the 10-cent rate.



Ansonia Ankoseal cable is available in quads and pairs as desired

Today's most modern cable

ANSONIA Ankoseal®

SAVES MONEY, MATERIALS, MANPOWER!

By all means read Ray Blain's article "Planned Construction in the Small Exchange" in Telephony, December 8, 1951, Volume 141—#23, especially Page 21.

The low initial cost of all-plastic Ankoseal saves money from the start. This lightweight*, low-loss cable permits extra-long spans. Result: fewer poles in new work and lighter (less expensive) messenger for replacements. Flexible and easy to handle, Ansonia Ankoseal saves on installation costs by requiring less manpower. Particularly popular, for instance, is Ansonia Type 611 which is a completely self-supporting service drop cable that weighs only 90 lbs. per 1000 feet (6 pair #19 medium hard drawn copper).

Individual conductors are encased in polyethylene, the most moisture-proof insulation yet devised for cable use. The outer polyvinyl chloride jacketing is completely non-corrosive and is unaffected by vibration or electrolysis. It resists sunlight, oil and practically all chemicals.

In one installation, twelve years of exposure made absolutely no change in physical properties—an indication of the long, trouble-free service life you can expect.

For real economy, longer life, easier installation and low maintenance, telephone engineers are switching to Ansonia Ankoseal.

** About ½ weight of lead cable.*

THE ANSONIA ELECTRICAL COMPANY

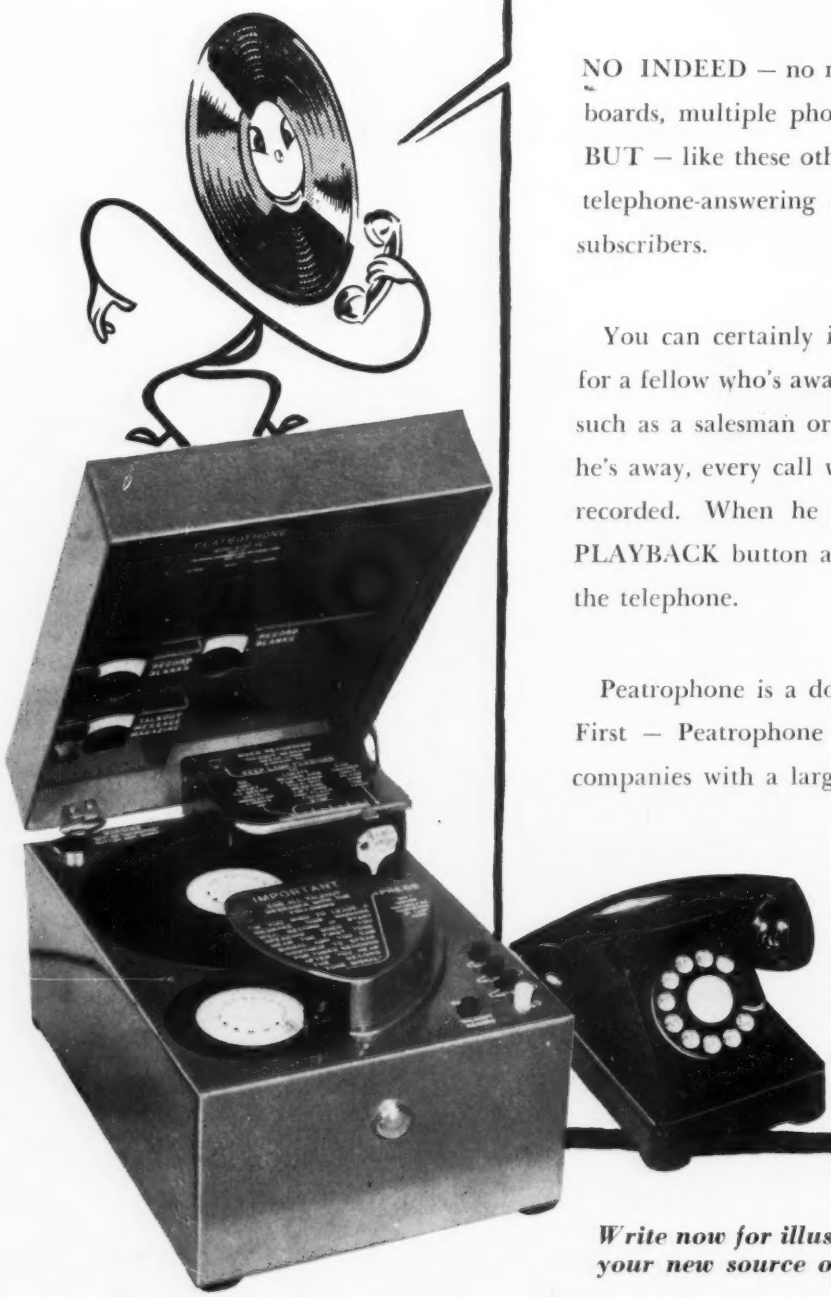
ANSONIA, CONNECTICUT

Tel. Ansonia 4-3306

Will all Telephone Subscribers want a PEATROPHONE?

"THE MECHANICAL SECRETARY"

"Pete" answers:



NO INDEED — no more than *all* subscribers use switchboards, multiple phones or intercommunication systems. BUT — like these other services, Peatrophone mechanical telephone-answering service is a real necessity to many subscribers.

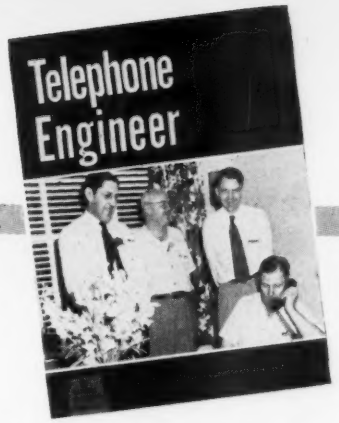
You can certainly imagine what a terrific job it does for a fellow who's away from his office most of the time — such as a salesman or service man. No matter how long he's away, every call will be answered and every message recorded. When he returns he has only to push the PLAYBACK button and play back the messages through the telephone.

Peatrophone is a double-barreled business builder too! First — Peatrophone leasing charges provide operating companies with a large new source of revenue. Second— business subscribers such as laundries, dairies, bakeries, etc., find that Peatrophone builds up good will and profits by providing a 24-hour order service for their customers.

Write now for illustrated booklet on PEATROPHONE — your new source of revenue.

TELEPHONE ANSWERING and RECORDING CORP.

342 MADISON AVE. Telephone • MUrray Hill 7-2193 NEW YORK 17, N.Y.



EDITORIAL

The Long, Long Toll Compensation Trail

IT HAS NOW BEEN six and a half years since the last adjustment — made July 1, 1946 — of compensation to Independent telephone companies for handling joint Bell and Independent toll business.

It is evident that an increase in such toll compensation is long overdue, since the cost to Independent companies of handling this joint toll business has increased heavily and steadily during the period.

The need for this increase is so evident, and the situation created by that need so urgent, that a number of state telephone associations have taken steps to hasten a new and more realistic division of joint Bell-Independent tolls.

These state associations are not attempting to take the job away from the Toll Compensation Committee of the United States Independent Telephone Association, which Committee has produced such excellent results for Independent companies in toll compensation through the years.

They recognize the fact that this toll compensation proposition is properly an industry-wide matter, as well as a very complex one.

It is said that the Bell System believes it necessary that changes in toll compensation be based on representative and adequate costs and separations data.

These associations and the Independent telephone industry at large have no objections to that procedure as a method of determining the final outcome of this matter. But they know that, as the Committee itself has said, this is a long-drawnout, time consuming process. Many more months may pass before it can be completed.

Meanwhile, time is running heavily against the Independents.

They feel that both sides should recognize, now, the obvious and undisputable fact that telephone operating expenses of all kinds have risen heavily during the past six and one-half years, and that some fair and reasonable increase in toll compensation to Independent companies should be made effective immediately, on an interim basis, with both sides duly protected by some retroactive clause.

In mid-1951 the Toll Compensation Committee employed an experienced engineering firm which prepared and sent to some 250 Independent exchanges a very detailed questionnaire designed to produce the data required for a final settlement of this matter.

The extreme complexity of this proposition is shown by the fact that this questionnaire required some 80 pages of explanation and instructions, and some 20 sheets to be filled in to answer intricate questions involving breakdowns of investment, expense, revenues and so on.

Returns of the questionnaires have been slow, and further time will be required before a sufficient number of them will be available as the base for a complete study.

The Committee, and also the USITA Executive Committee, is making strenuous efforts to have the questionnaires completed and returned.

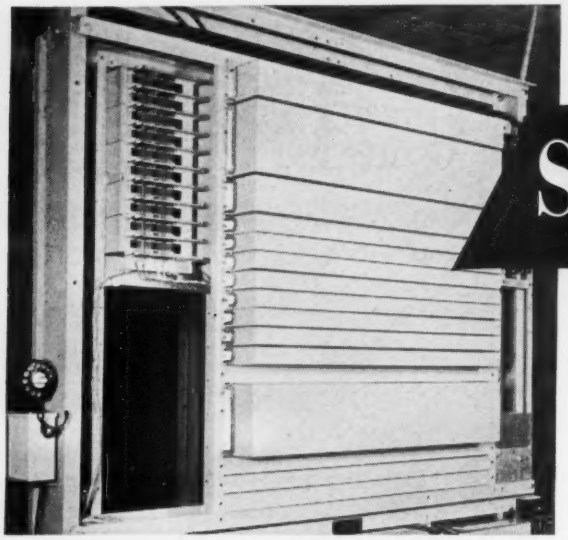
But these toll separations and compensation studies are inherently complex and consequently time-consuming. While the work of completing them is under way, time is running heavily against Independent companies unless some increase in their toll compensation is made effective.

The USITA Toll Compensation Committee has in the past negotiated several badly needed increases in toll compensation for Independent companies. It is well experienced in such matters. It is meeting with Bell System representatives again, February 18-19. It has well in mind, of course, the possibilities of putting this situation on a more realistic basis via an increase on an interim basis if a final settlement cannot be made now.

The Executive Committee of USITA summarized this situation well, we think, in a resolution it adopted December 11 and which said in part:

> "RESOLVED, that the Bell System be strongly urged to reach agreement with our Toll Compensation Committee at the earliest possible date upon adjustment in our toll compensation, so that practical recognition may be given to the changes in economic conditions that have taken place since the last adjustment was made in such toll compensation".

Stromberg-Carlson XY T
TYPE A



Common Equipment Shelf, mounting the Clock-Calendar, Counters and Control units.

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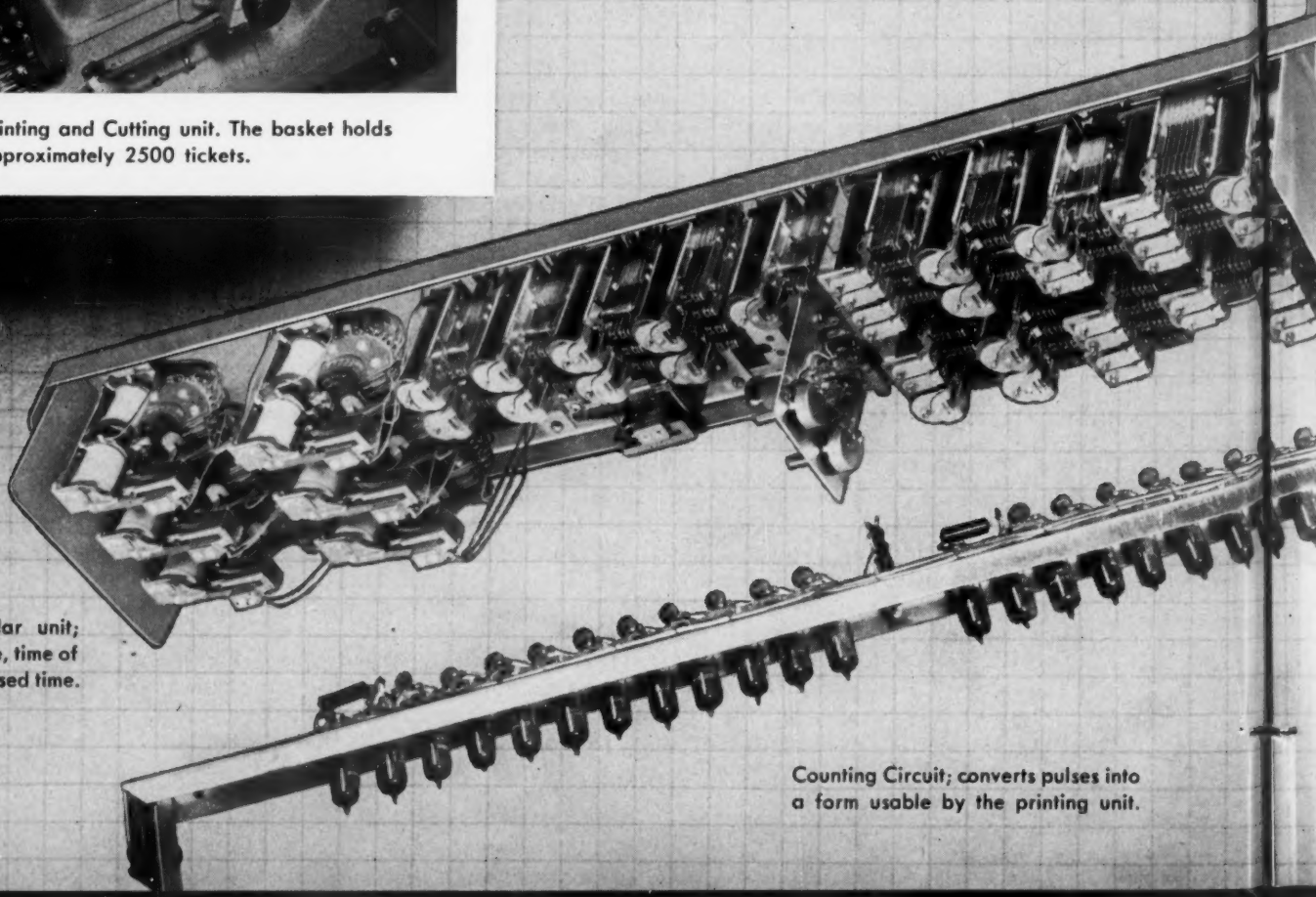
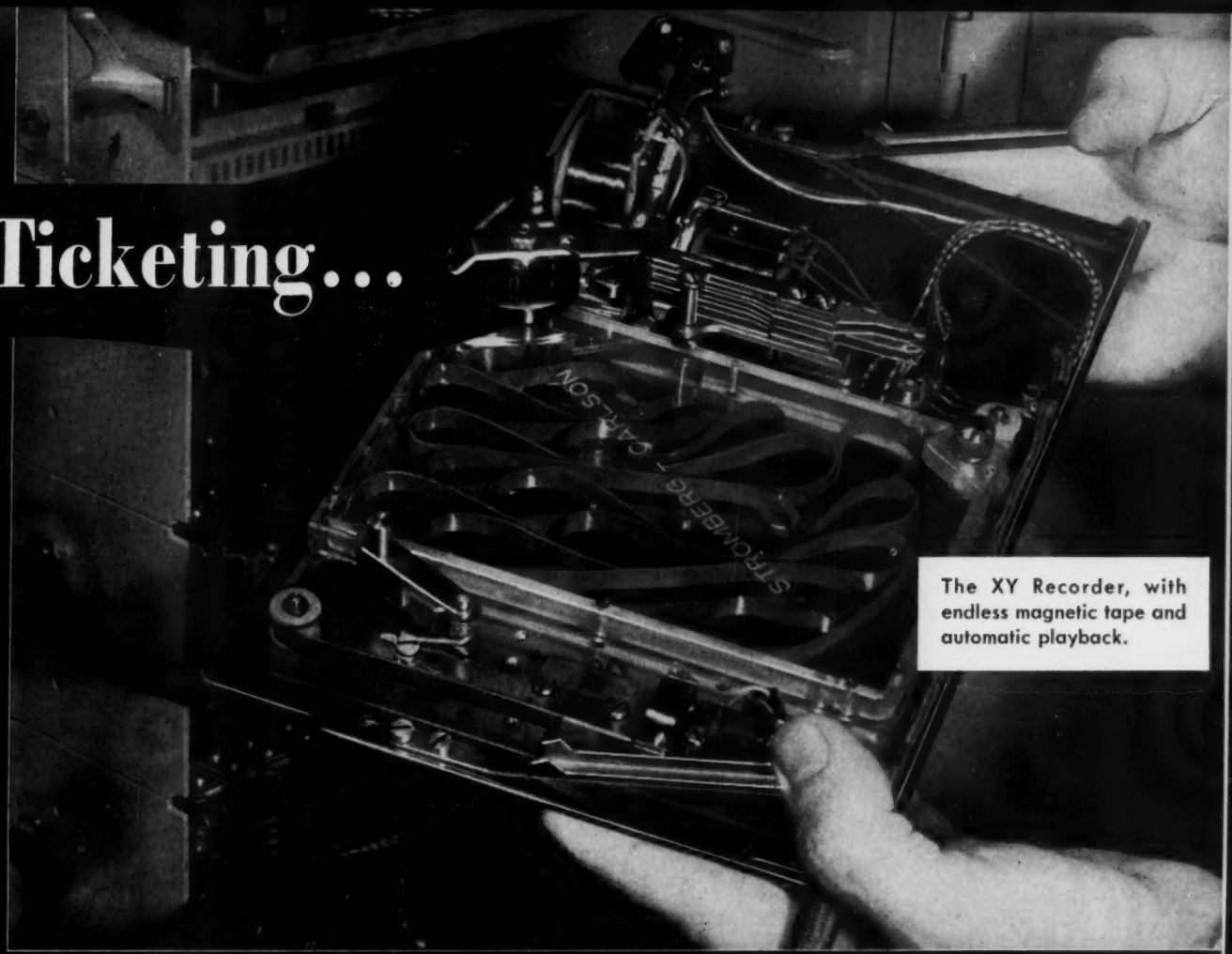


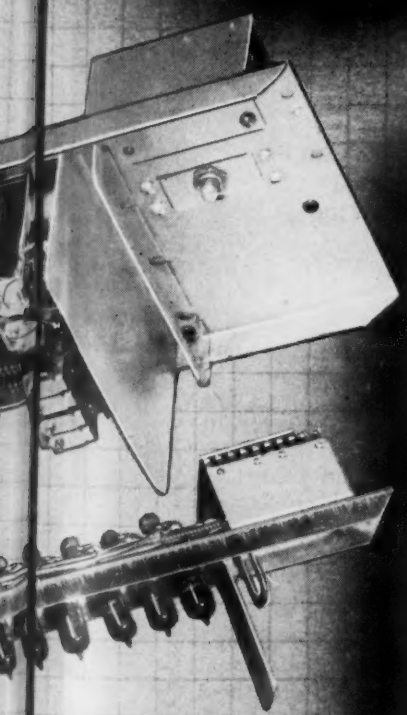
Clock-Calendar unit; provides date, time of day and elapsed time.

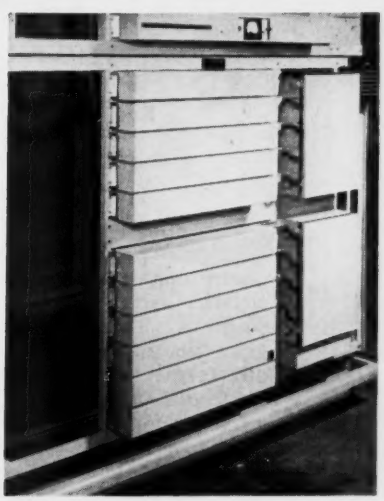
Counting Circuit; converts pulses into a form usable by the printing unit.

XY Toll Ticketing...



The XY Recorder, with endless magnetic tape and automatic playback.





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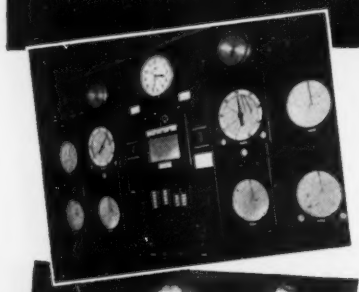

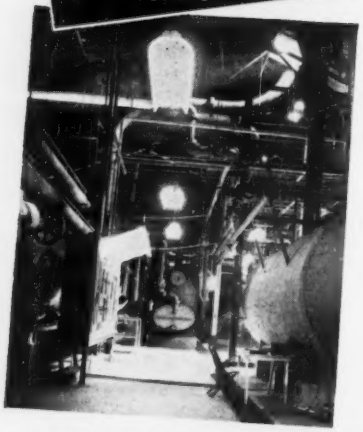

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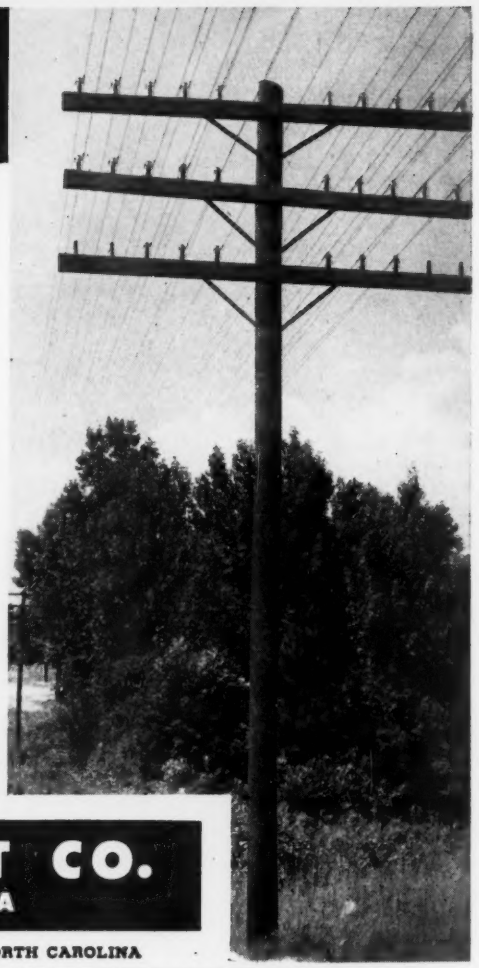

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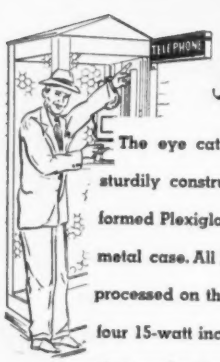

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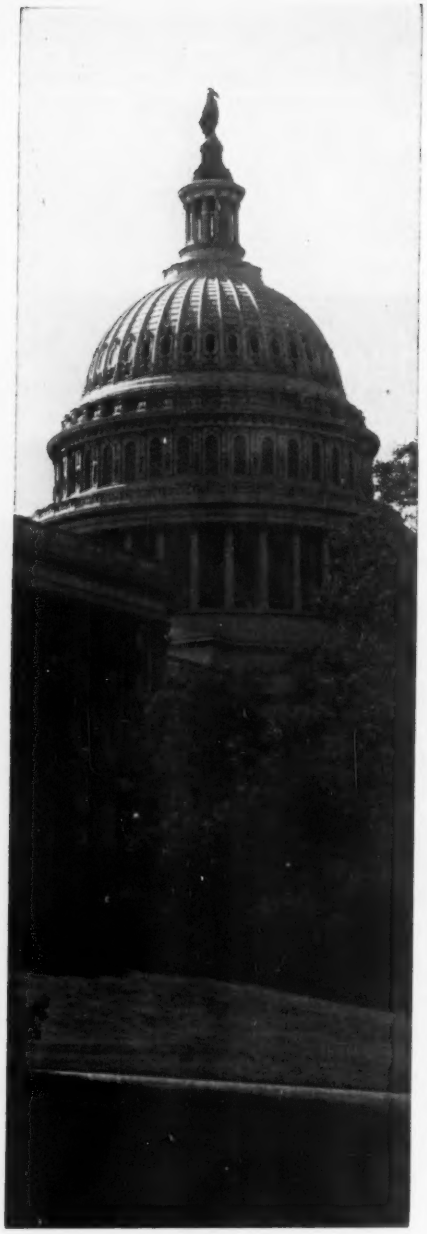

Washington Bureau Reports

By ROLAND DAVIES and FRED HENCK

Washington Bureau surveys FCC affairs—finds industry can expect long wait for decisions . . . Jack Werner resigns from FCC . . . $52,000,000 allocated by REA in 1952. More than $17,000,000 advanced to REA borrowers . . . Washington observers take look at new administration—warn businessmen to remember GOP cannot work miracles overnight.

INDEPENDENT telephone companies interested, individually or collectively, in matters pending before the Federal Communications Commission, generally will have to wait long periods for decisions, it appears from a year-beginning survey of FCC affairs made by TELECOMMUNICATIONS REPORTS, Washington correspondents for Telephone Engineer.

The Commission has so much pending business that it probably could keep comfortably occupied all year if absolutely no new common carrier applications, petitions, tariffs, or complaints were filed with it during 1953. Obviously, this is not going to happen — it appears that the new business laid before the FCC will be about the same in quantity as in the past several years.

One factor leading to increased workloads for the FCC's common carrier staff is the number of matters which affect almost all branches of FCC activity, such as the soon-to-be-resumed theater television case, in which the US Independent Telephone Association is participating. The question of whether frequencies should be allocated for an entirely separate theater television radio service, or whether the job of transmitting television around the country to theaters can be handled by existing mechanisms, is of obvious long-range importance to common carriers.

One long-pending application before the FCC, which is expected to come up for Commission action fairly soon, was filed by an Arkansas group seeking authority for a microwave radio relay system to pick up broadcast signals from TV stations and relay them to a community antenna system in a town not served directly by video stations. Again, since approval doubtless would lead to similar projects by others, the case has significance for telephone companies.

The long-awaited domestic public radio rules, covering all common carrier radio services now on an experimental basis, are in the final stages of preparation, and should be before the Commission for action within a few weeks. The proposed rules will cover such services as rural subscriber radio links, short-haul toll, studio-transmitter links for broadcasting purposes, and microwave radio relay.

The FCC should act very soon on the petition of the Bell Telephone Laboratories for a frequency allocation to permit the development of a broadband, multichannel radio system which is intended to provide many more radio channels for mobile services from a given amount of frequency space than are now possible. The FCC turned down the Laboratories' proposal before, when frequency space allocated to television was sought, but invited the organization to resubmit the request.

Within a short time, there will be a number of personnel changes at the Commission, reflecting the return of national administration to Republican control.

One change which already has taken place has little if anything to do with the shift in the political picture. Jack Werner, Chief of the FCC Common Carrier Bureau, has resigned to enter private law practice. Mr. Werner had been Chief of the FCC bureau for the past two and a half years.

The move by Mr. Werner bears no resemblance to the past departures by many officials of government agencies to earn larger salaries in the same fields they worked in as government employees — with obvious advantages to their new employers in obtaining men who know the ropes in the regulatory and other government bodies with which they are dealing.

The firm of Freedman and Levy, which Mr. Werner is joining, has had absolutely no FCC practice. Furthermore, while the firm's newest associate expects to accept whatever legitimate cases come along, including FCC matters, he will not be specializing in communications or rado practice. In a capital in which high ethical standards are not always the rule, Mr. Werner's selection of his new activity rates more than passing mention.

A Purple Heart combat veteran of World War II, Mr. Werner has been with the FCC since 1946. When the common carrier organization was established in early 1950, he became Assistant Chief, and he was named Chief when his predecessor, Harold J. Cohen, left the Commission.

Selection of a Republican Chairman of the FCC is quite likely to be announced before the inauguration of President Eisenhower Jan. 20. It is commonly accepted in Washington that Vice Chairman Rosel H. Hyde, an Idaho Republican who is an FCC career employee, will be the first man ever to head the Commission in a GOP administration. Mr. Hyde, who has been with the FCC and its predecessor, the Federal Radio Commission, for a quarter century, gained a reputation as a skilled and efficient administrator, with a distinct dislike for red tape, during the periods he has served as acting Chairman of the agency.

One, and possibly two, vacancies on the Commission, will be immediately available to the Eisenhower administration. One post, held by Eugene H. Merrill on a recess appointment, can be filled as soon as the Senate confirms wheatever nomination President Eisenhower sends to Capitol Hill. The other is the position of Chairman Paul A. Walker, whose term expires June 30. Chairman Walker has indicated that he expects to complete his term — he is now more than 70 years of age — but it is possible that he will resign before that time.

There have been no indications of resignations by the other FCC members, but selections of GOP members to fill the assignments now held by Commissioners Walker and Merrill would raise the total of Republicans on the FCC to four, all that any party is permitted under the Communications Act.

Rumors as to the identity of the new Commissioners have filled the trade press since the Eisenhower election victory, but it is clearly accurate to say that as these lines are written no Washington newspapermen know who the new Commissioners will be. Most of the speculation thus far has been of the "shotgun" variety — based on the theory that if a publication mentions enough names, it is almost certain to hit the correct person at one time or another.

REA Reports on 1952

DURING 1952, the Rural Electrification Administration approved farm telephone loan allocations almost equal to the combined total of two previous years of the program, REA has brought out in a summary statement.

Approved during the past year was about $52,000,000 in telephone loan allocations, compared to the total of $54,000,000 for the first two years.

The year also brought large-scale construction of REA-financed telephone facilities for the first time, the agency said. Many telephone borrowers completed the long period of signing up subscribers, engineering design, and construction, and put into operation 18 of the 20 automatic dial systems now in service. REA said that since the middle of November, an average of more than one new system a week has been cut over into service.

REA-financed telephone systems are in operation in more than one quarter of the states — Virginia, Iowa, Minnesota, New York, North Carolina, Tennessee, South Carolina, Louisiana, Indiana, Georgia, Texas, West Virginia, and New Mexico. Texas and Iowa each have three systems in service, REA reported, and the third cutover in South Carolina is scheduled for the next few weeks.

Funds actually have been advanced to about 100 borrowers, totaling more than $17,000,000, it was added.

New Administration

IN A COLUMN written soon before the inauguration of a new President, particularly one who brought about the first change in national administration within the memory of almost all of the performers in the four nationally-televised New Year's Day football bowls, the temptation to the Washington reporter to say a few words on the subject is almost overwhelming.

What makes the temptation less attractive, despite its overpowering nature, is that practically everyone who covers news for a living — and a lot of people who don't — already have succumbed to it, and they haven't left much to say.

But, for our money, the situation was best covered by a man who doesn't report news for a living, but runs a telephone company — a fellow more than a little known to the Independent telephone field, Luke Hill.

In his speech as retiring President of the US Independent Telephone Association at the 1952 convention, Mr. Hill pointed out that, despite the preoccupation of most Americans with their favorite Presidential candidate at that time, the national debt and taxes would be just as high the day after Election Day as they were the day before.

Something can be done about this by the new administration — it doesn't have to be an entirely permanent situation — but obviously businessmen should remember that the new administration can't work miracles in the present world situation. The new administration will not start operations with the approach that business should be called on to furnish much of the key manpower and a large proportion of the tax money, that it should be expected to pull a lot of chestnuts out of the fire for government bureau heads through its sheer productive and service capacity, or that it makes the most magnificent whipping boy in history for political purposes. But the GOP can't reverse a lot of situations overnight.

At any rate, the fact that business won't always have two strikes on it to begin with is all the more reason

(Please turn to page 86)

Fig. 205—Switchboard man using portable cord repair unit consisting of small table equipped with casters for repairing cords at switchboard positions. Note cord tip crimping tool at right.

Modern Central Office Maintenance Practices

By JOHN S. REED

Section XIV-A of Mr. Reed's article begins a discussion of the maintenance of the equipment used in the switchboard.

ASSOCIATED with the routine testing of switchboard circuits is the maintenance of the equipment used in the switchboard. The equipment, particularly cords, plugs, and jacks are in constant use and will wear to the extent where noise and cut outs result.

In the use of switchboard cords, the continual handling of the cords by operators result in the gradual wearing of the cord just below the plug. The cord is bent at this point every time it is inserted into the jack. Eventually the braid becomes frayed and the tinsel conductors are finally crystallized. If the cord wear is allowed to continue to this point, the cord will become noisy and may even cut out.

A less noticeable form of trouble, which is nevertheless just as serious as cord wear, is the gradual deterioration of the conducting surfaces of the plug on the cord. As the result of contact with the operators' hands and exposure to oxygen and moisture in the air, an accumulation of natural grease and oxide is built up on the conducting parts of the plug. Over a period of time the transmission efficiency of the cord circuit is thus gradually reduced. This results in many service complaints before the trouble is finally located and remedied.

The proper care of switchboard cords and plugs by central office maintenance men is an important factor in keeping the cord circuits at their maximum operating efficiency.

Whether the cords should be repaired at the switchboard, or taken out and reconditioned elsewhere, depends mainly on the size and number of manual exchange offices involved. If the telephone company has a number of such offices and maintains a repair shop at a central location, it is often economical to have cords sent to the shop at regular intervals for reconditioning. This should be done when the cord braid starts fraying, or the cord begins to be noisy.

Inspection of Cord and Plugs at Switchboard Positions

A ROUTINE FOR inspecting cords and plugs should be set up on a regular basis to assure maximum operating efficiency of the cord circuit. In this procedure the cords are examined for worn braid, defective plugs, damaged plug shells, and correct color arrangement in accordance with the operating room procedure. Associated items, such as plug seats, cord weights, and cord hangers should also be checked.

As many cords as can be held in the hand are pulled out about eighteen inches for the inspection. The cord braid is examined for wear and excessively dirty condition. Frayed braid or excessively dirty condition is cause for removal of the cord for cleaning and rebutting. Cords with frayed braid may be rebutted at the switchboard, though no attempt should be made to reuse cords that have the reinforced portion (double braid covering) worn within three inches of the end of the rinforcement on the body of the cord. When cord repairs are made at the switchboard, it is convenient to use a cord table on casters with the necessary tools mounted on it as illustrated in *Figure* 205. The rebutting procedure is the same as that described under shop repair of switchboard cords and plugs.

In this connection, switchboard cords with nylon braid have come into use within recent years and promise to greatly reduce the need of frequent rebutting of cords to maintain their service life. Cotton braid cords on busy positions require rebutting on the average of every six months and may have a service life of four

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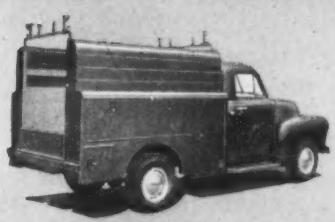
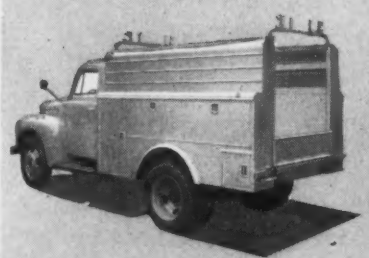


Series 44-L-90 for chassis having approximately 48″ C.A. dimension.



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years. Nylon braid cords on the same busy positions have lasted five years before requiring cleaning and rebutting. After being cut back once, these cords have continued in service and are still in active use after three additional years.

The plugs are examined for loose insulating bushings (on old type plugs) which might cause crossing of the tip, ring, and dead collar (on three-conductor cords). Present day plugs are less subject this trouble due to the use of extruded plastic insulation and welded connections to replace hard rubber bushings and terminal plates fastened with screws. Plugs that are bent to a noticeable extent should be straightened. The tool shown in *Figure* 206 will effectively straighten the type of plug for which it is designed. With this type of tool, plugs can be checked for extent of bending and then restraightened in a socket provided in the tool.

Plug shells are checked for loose fit on the plug, enlarged screw hole, cracks, or chips. Shell screws loosen quite easily, causing annoyance to the operators. Such screws should always be tightened in the inspection. Shell screws that have worn slots or threads will require replacing.

Plugs should be gauged for wear at certain intervals to make sure they have not worn to the extent that they will cause poor contact in the jacks with resulting transmission loss or noise and cut outs. Plug gauges such as those illustrated in *Figure* 207 are of the no-go type. Care should be taken not to force the plug into the slots while gauging them. The plug should be placed on the top of the proper slot in the gauge and rotated with a light pressure. For three conductor cords, the tip, dead collar, and sleeve positions of the plug are gauged in this manner. Undergauge plugs should be replaced with new plugs. Worn or defective plugs can be returned to the manufacturer for rebuilding when it is economical to do so.

After repair, switchboard cords should be tested for crosses between dead collar and ring or between tip, ring, and sleeve. For small offices ordinary short circuit tests can be made with test receiver and battery, ohmmeter, or ringing current and a-c buzzer. For larger offices, a test set similar to the one illustrated in *Figure* 220 may be used.

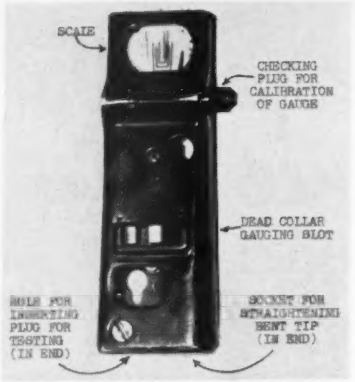

SCALE
CHECKING PLUG FOR CALIBRATION OF GAUGE
DEAD COLLAR GAUGING SLOT
HOLE FOR INSERTING PLUG FOR TESTING (IN END)
SOCKET FOR STRAIGHTENING BENT TIP (IN END)

Fig. 206—Plug straightening tool.

Plug seats should be examined for excessive wear which is indicated by the plugs tending to stick in the seats, also by wear on the cords. The use of rubber cushions on the cords just under the plug base will greatly reduce plug seat wear and at the same time decrease the noise of the plug striking the seat when the cord is restored to its normal position. These cushions also effectively reduce braid wear near the cord butt.

In some offices, the operators may have the habit of turning down cords of defective circuits to prevent their inadvertent use. This method is hard on the cords and plug seats, and should be discouraged. The operators should be instructed to place trouble sleeves on cord plugs of circuits in trouble so that the defective circuits will not be used until the necessary repairs are effected.

Cord weights should be checked for broken or binding pulley wheel. The weights should operate freely without interfering with adjacent cords. Cord hangers which support the cords and relieve strains on the cord conductors should be in place on the hooks provided for them.

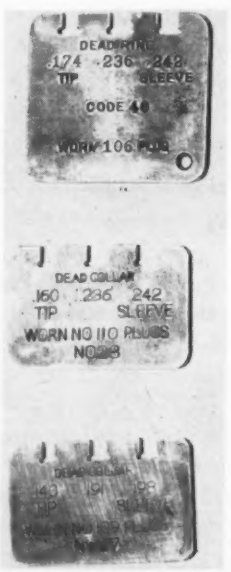


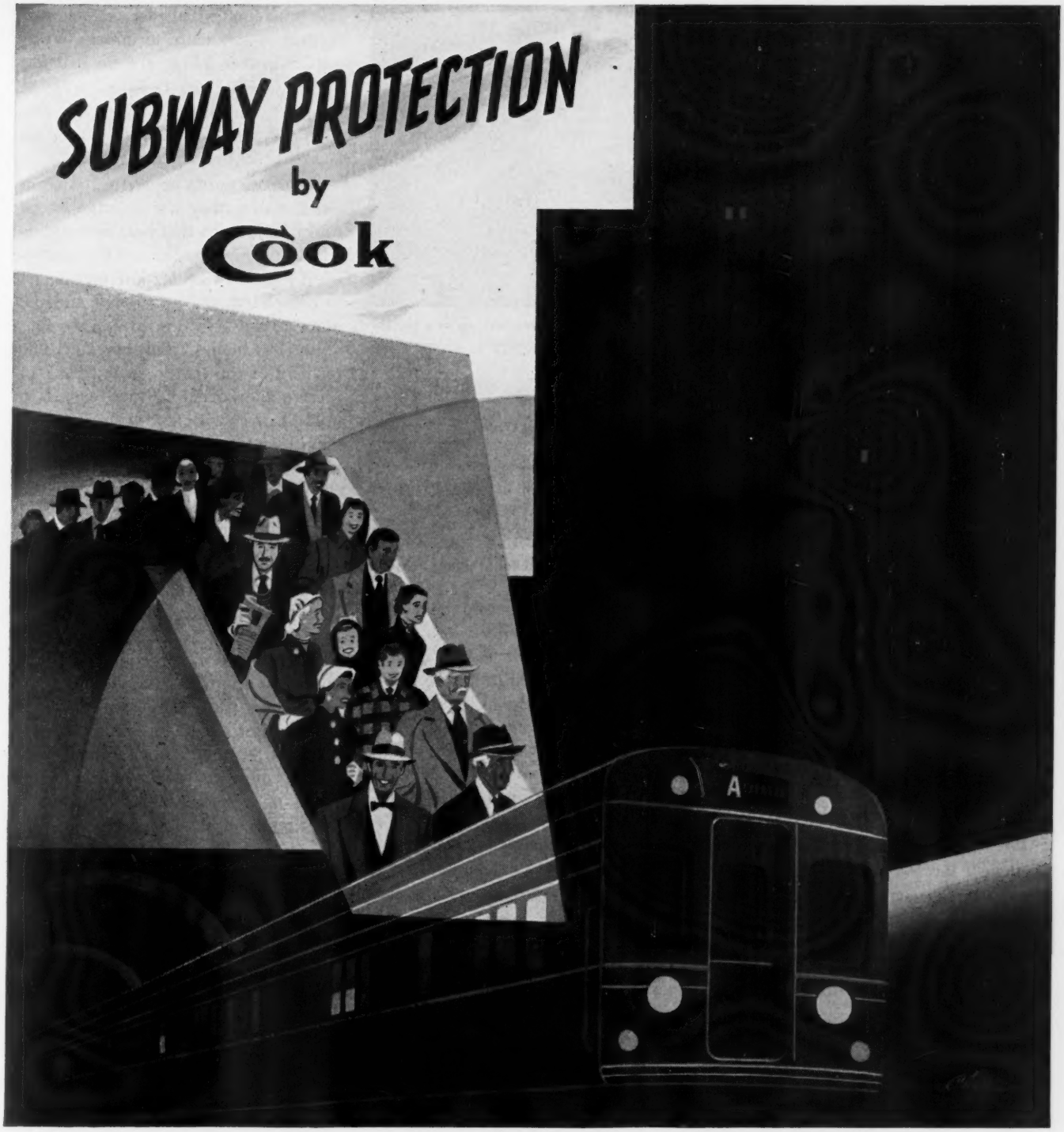
Fig. 207 — Standard plug gauges.

There are several ways in which the cords can be cleaned. The oldest and probably the most frequently used method in small offices is to wrap a clean cotton tape once around the plug sleeve, anchor one end of the tape, and, then holding the other end of the tape in the hand, pull the plug back and forth on the tape. A little plug polish on one portion of the tape will clean the plug and then passing a clean portion of the tape over the conducting surfaces will impart a brilliant gloss to the brass parts of the plug. By moving the plug along the tape all of the sleeve, ring, and tip can be polished. Only standard plug polish should be used for this purpose. No coarse or corrosive abrasive compounds should be employed as they will cause the plugs to wear out rapidly and produce corrosion of the brass parts.

In large offices, a common plug polishing jig is the one shown in use in *Figure* 208. This tool is designed to be set on the lock rail of the switchboard, the keyshelf being raised slightly for this purpose. It has a split chuck to fit the type of plug used on the cords and a centering pin to suport the tip end of the plug. In use, the chuck is opened slightly by means of a lever and the plug is inserted into it far enough for the tip to rest in the centering pin. The lever is then operated to close the chuck and clamp the plug. The plug is polished by means of a cloth tape looped over it. A small amount of plug polish is applied to one portion of the tape. The tape is then pulled back and forth while at the same time being moved along the conducting surfaces of the plug, to apply the polish. To remove the paste and impart a high gloss to the brass surfaces, the tape is pulled to one side to bring a clean portion in contact with the plug and then pulled back and forth.

Recently developed plug polishing machines such as those shown in *Figures* 209 and 210 will save time and effort in polishing the plugs on the switchboard. The construction of a machine type plug polisher is shown in *Figure* 211. This plug polishing device consists of a self-aligning telescopic chuck with two tubu-

(Please turn to page 40)



Cook Electric Company's protection and distribution equipment, which is being used by the New Chicago Subway System, is now also specified for the Toronto Subway under construction.

Cook cable terminals, central office protectors, and main frames are incorporated in a comprehensive system of subway intercom, train dispatching, and train control, which has achieved a high factor of safety and accident free operation, providing 140,500,000 subway rides annually.

Inasmuch as subway engineers have installed Cook Electric Company apparatus for critical underground installations, you too can confidently specify Cook for central office underground and aerial services.

Consult your Telephone Supply House or Switchboard manufacturer and he will advise you as to the most modern and efficient telephone protection and distribution equipment which is five generations improved.

COOK ELECTRIC Company

2700 Southport Ave. *Chicago 14, Illinois*

lar polishing felts, one for the sleeve and the other for the tip and collar of the plug. Their felts are replaceable and new ones can be obtained from the manufacturer.

Surrounding the felts are specially designed compression rubbers, each operating independently. As the plug to be polished is inserted in the tubular felt, it first travels through the sleeve felt, then in to the tip felt where the action of the tip's compression rubber forces the felt down into the recesses of the tip and collar. Correct pressure is then applied to the tip, collar, sleeve, and shoulder of the plug simultaneously. The telescopic action of the chuck compensates for any reasonable wear on the polishing felts. This polisher is adaptable to plugs having a maximum diameter of 0.270″ and a minimum diameter of 0.225″ with a maximum length (tip and sleeve) of 1.265″ and a minimum of 1.093″. Outside diameter of the chuck is 7/8 in., enabling double type plugs to be accommodated. It is operated by a 1/30 h.p. 110-115-volt A.C. induction type motor with a speed of 1,500 r.p.m.

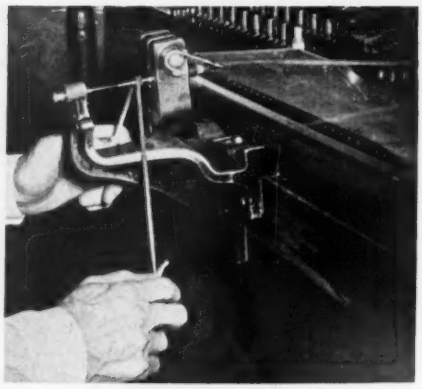


Fig. 208—Using plug polishing jig at a switchboard position.

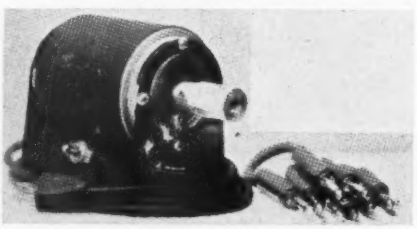


Fig. 210—Delzell Switchboard Plug Polisher.

Shop Repair of Switchboard Cords and Plugs

WHEN SWITCHBOARD cords and plugs are repaired in a centrally located shop or at a repair bench in the central office the work is handled as outlined below.

When a sufficient number of cords have accumulated, the cords are sorted into groups according to kind (two or three-conductor, heavy or light construction) and color. They are carefully examined for defects, such as badly frayed or rotted braid, the latter determined by twisting the braid slightly to note if it gives readily. If the cord is frayed within three inches above the braid reinforcement (extra layer of weave underneath the braid), or if the reinforcement is shorter than three inches, the cord should not be used.

At this time the plugs are removed and checked for wear of the conducting surfaces, using standard plug gauges. The plugs are inspected for defects, such as broken tips, or missing or damaged shells, or stripped threads in conductor terminals. Worn out or broken plugs are discarded.

Dirty cords are sent to a local laundry for dry cleaning by any standard method, providing that no corrosive chemicals are used.

After the cords are returned from the laundry, they are rebutted. An effective tool for this purpose is illustrated in *Figure* 212. This instrument has two circular knives, one set to completely sever the cord and the other to cut only the braid covering about 1½ inches from the end. The top end of the tool is swung back to receive the cord and then closed to hold it in position. Operating the handle cuts off the frayed end of the cord, and, at the same time, the cord is rotated by hand to sever the braid. The tool is then opened and the severed braid slipped off the cord.

The end of the braid covering is served with a layer of No. 35 2-ply linen thread, using the method shown in *Figures* 213 and 214. The filler threads between the conductors are trimmed off with diagonal cutting pliers and the conductors then cut to the right length to reach their associated terminals on the plug. The sleeve conductor usually has the insulation completely removed, baring the tinsel conductors.

Cord tips are next attached to the tip and ring conductors. (Some two-conductor cords may require cord tips on both the tip and sleeve conductors.) These cord tips have prongs in the shank for piercing the conductor covering and making contact with the tinsel conductors. They are known as solderless tips.

A special tool, such as that illustrated in *Figure* 215 is employed for crimping the solderless tips onto the conductor. The dies on this tool are shaped to form the serrated edges of the solderless tip shank around the conductor and at the same time force the prongs through the insulation and in contact with the tinsel.

The plugs that were previously removed from the plugs are cleaned and polished, using a plug polishing machine such as these shown in *Figures* 209 *and* 210. They are then gauged as shown in *Figure* 216 to make sure that they have not been reduced in size by the polishing process. On certain makes of plugs, the

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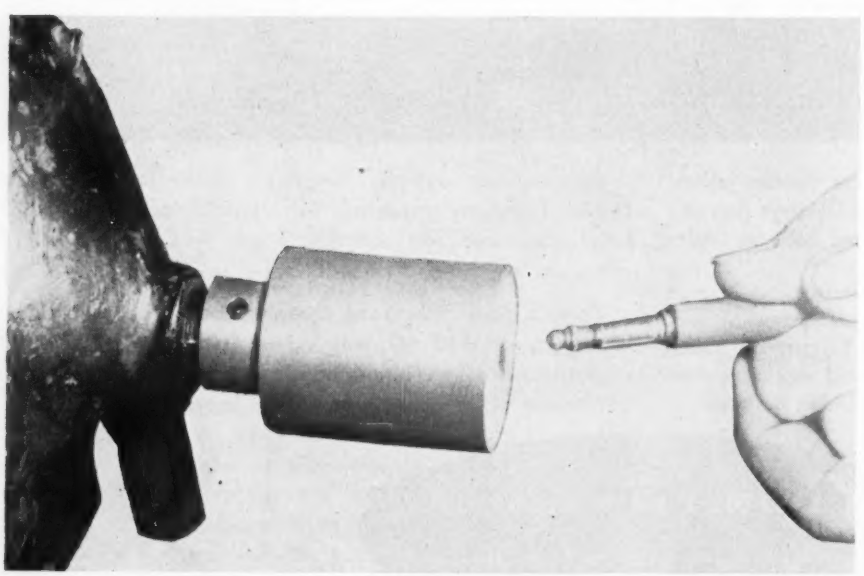

Fig. 209—Long Plug Polisher designed to fit on motor with 3/8″ or 1/2″ shaft and which makes use of treated felt washers to polish the plug.

"Everyone in our industry has a second job and it is an important second job of serving as 'Ambassadors Without Portfolio' in creating better community relations."

"Ambassadors Without Portfolio"

By Frank C. Laver *

AMERICAN Industry in general and the telephone industry in particular is expanding at a rate never equalled before in history. While this program of expansion is a healthy one, it has not been without its drawbacks, for the telephone industry, so involved in its efforts to meet the demand for service, has not always had the opportunity to pause in its efforts in providing good service to tell the subscriber and the general public that it *is* providing good service.

This problem of getting to the public with the company's side of the story is increasing in its importance. The telephone industry is not only aware of this problem but is taking active steps toward its solution. Articles which have as their subject the need for improving public relations are appearing more and more frequently in our trade magazines. State conventions are placing greater emphasis on this problem. Four of the seven addresses delivered at the 55th annual convention of the Ohio Independent Telephone Association had as their topics the need for improving public relations, or, as we shall term it here, community relations.

Let us then agree at the onset that there is this vital need for the telephone industry to improve its relations with the community, and, bearing this premise in mind, let us see what we, and by we I am referring to everyone in the industry, can do to bring about smoother and more pleasant relations with the community.

Perhaps you folks may be wondering why I, a member of an engineering department, should be telling plant and commercial folks, who aren't in the advertising or publicity departments of their companies either, about the need for better community relations. Perhaps it is because in my 13 years in the industry I have formed some positive opinions about how our business fits into community life and the missed opportunities for plant and commercial folks, in fact telephone people everywhere, to present the fine-grained picture of the telephone company's role as good neighbors, or perhaps it may be that I feel that a telephone company which enjoys good community relations is a strong company.

A strong company means greater job security, and greater job security affects us all.

Therefore, I am sure that everyone in our industry has a second job and it is an important second job of serving as *Ambassador without Portfolio* in creating better community relations.

I do not intend to imply that we can handle this problem alone. Our advertising departments must maintain their high standards and energy, but they do need our help. Of course, our advertising departments use the accepted means of getting the company's side of the story to the public. Yet, in spite of the thousands reached through advertising in various media, its language is often defensive, as often it must be, because they are called upon quite often to make amends for some company action, or to consolidate and hold subscriber good-will.

Bought and paid for advertising is just that, bought and paid for. The public knows that and views the telephone company's ad with the same skeptical eye that it reads a soap ad, or a cigarette ad. Yes, 99 out of 100 doctors use the telephone. They already know that! How much of it is propaganda; how much of the telephone company's claims about providing the best possible service under the circumstances is true?

They aren't sure.

This is not intended to be a reflection on advertising . . . because that kind of selling is as important today as it ever was.

This does mean however, that advertising, no matter how well laid

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**Mr. Laver is equipment engineer for the Peninsular Telephone Co., Tampa, Fla.*

out, how well written, or how well scheduled for release to the public still leaves a tremendous vacuum between the good-neighbor actions of telephone companies, or any company for that matter, and the public's grasping and believing this advertising.

Whom does the average person trust, a telephone company official speaking before the Rotary Club- Yes, if he were a member of the Rotary. But the people in the audience are not average people. The Rotary members, more often than not, are long established citizens. They have probably had telephone service for years: business or professional men who understand that higher rates are necessary for expansion requirements, who realize the need for a reduction in taxes, and who are aware of the need for greater depreciation reserves if the local telephone company is to continue to improve its service.

But what about the fellow who is buying his home, perhaps in a new G. I. subdivision and waiting for telephone service? Whom does he believe, the company official speaking before the Rotary? He doesn't belong! The company newspaper ads explaining that the company is meeting demands for service as quickly as possible; in fact, installed so many thousands of telephones last year?

This doesn't register fully with him, for the only telephone that really matters to him is the telephone he didn't get. Whom does he believe; where can he turn?

"Community Relations"

CHANCES are he knows a telephone worker, maybe the cashier in the commercial office, or a lineman, or perhaps he lives a few houses down the street from a P.B.X. installer. "I can trust that guy," he thinks to himself. "He'll have the real dope; maybe he hasn't returned my lawnmower yet, but he's O.K."

Almost everyone in every community knows someone who works for the telephone company, someone they are just as apt to ask a question as they are to rely on company advertising for telephone information. More community relations are transacted over the back yard fence, on a fishing trip, over a bridge table, or in the business-hour contacts of employees with townspeople than are consummated in the press or over the radio. And what's more, it's more believable because it has the personal touch.

Frank C. Laver, equipment engineer of the Peninsular Telephone Co., Tampa, Fla., addressed the Florida Association's Joint Commercial & Plant Conference.

Now, if the employees other job, besides his regular assignment of writing service orders or installing telephones, is being a press agent for his company, how can accurate information be passed on to him so that he himself believes it, retains a considerable portion of it, and is so permeated with the basic facts about his company that he is eager to cement himself further in the security of his own job by being a company goodwill ambassador to his friends and neighbors?

Where is he to get this information? Mr. R. E. Roberts, director of management relations of the Ford Motor Co., sees employee instruction of this type "as the golden opportunity for American management to regain and reassert its most constructive leadership and that management has the responsibility to provide its employees with the kind of honest information that will help them obtain this objective."

He further states that the Ford company wants and desires its workers to know and understand the policies and the problems of the company, for, to quote him again, "If we fail to provide workers with the facts, they will form their own opinions on the basis of rumors, hearsay, or misinformation." This is not only true in the automotive industry, but in all industry everywhere.

Therefore, the employer must assume the responsibility of getting concise and concrete information to the employee.

Facts can be given him; you know the ways: through an indoctrination program for new employees, where the new employee can be told what the company is all about, how it is organized and why, what the aims of the company are, and above all, what part the employee is expected to play in the overall picture of furnishing good service; following the indoctrination program management can keep the employee informed through its supervisory staff, through its employee magazine, and from the bulletin board. From considerate management that does not incorrectly assume that because it knows of an impending event that affects the company that every employee knows about it too.

Facts can be given him by not shrouding labor-management relations in a veil of secrecy, when telephone companies in Florida actually enjoy excellent relations with trade unions; by using the media mentioned before to reinforce in workers the idea that labor and management working together in a competitive free enterprise market have made the telephone industry and all industry — yes, and our great land — what it is today; by not being apologetic about capitalism and profit, but explaining what they are and how both are necessary, indeed, how they both benefit the company and the individual.

Employee Responsibility

NOW, I BELIEVE that we will all agree that the employee has the responsibility of a second job and that management has the responsibility of supplying information so that the employee may handle this second job. But this must not suffice. Management has an additional task of making the employees receptive to the information that is offered so that the employee, given these facts about his company, is eager to be a company goodwill ambassador to his friends and neighbors.

Management may give the information to the employees, repeat it, even *pound* it at the heads of the employees, but the workers won't neces-

sarily read it, listen to it, much less believe it if these basic facts are not presented in a conductive atmosphere. Conductive atmosphere, then, is that company climate that will make all workers attentive, will cause them to retain these messages, believe them with such fervor that they will meet with their friends and neighbors outside the telephone business with an emotional zeal to do their big job of community relations.

It would seem that some thought should be given to arriving at this conductive atmosphere. There are four conditions which must exist, or no worker anywhere, and no member of any group will feel "at home."

"Feeling of Belonging"

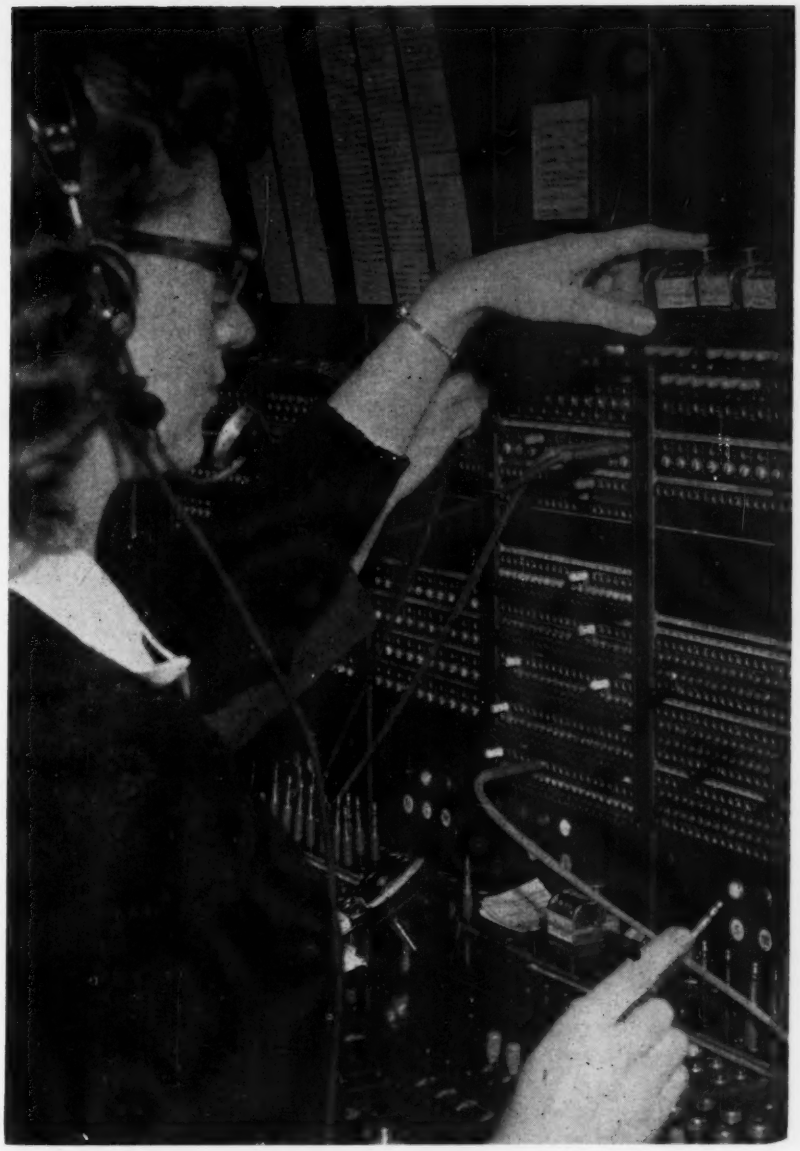
FIRST, AND certainly the most important condition to consider in creating or maintaining high employee morale, concerns the worker's feeling of "belonging." Biologically and socially man was never intended to go it alone. Man wants to feel he is a genuine member of the group. Most companies would call this the "family feeling," the feeling of being on the team. We realize that a sense of not belonging breeds distrust and insecurity which results in poor work performance and a determination to do no more than his part — just enough to get by.

Top management recognizes that security in a group is needed before an employee does his job to the best of his ability. So the task for management is not to work out new basic ideas about the need for engendering a sense of belonging to the group on the part of every worker but to set about training supervisors, foremen, and other actual working bosses of small groups of people in the art of getting along with their fellow workers; training them that workers under them have other needs besides economic security — such needs as spiritual, social and personal that a paycheck, no matter how large, can ever satisfy.

This principle has been pointed up time and time again in recent years. Take the story in *Life* magazine of a few weeks ago which reported that a Texas firm paying fifteen dollars a week less than the prevailing wage could hire competent employees away from other companies by offering a program of varied recreation and off-duty activities. The important point is, I think, not that the workers wanted the recreation. They could easily have bought their own entertainment for the fifteen dollars they could earn elsewhere. What they received was an outlet for their natural gregariousness, which proved to them that their company was a good place to work, that it was fair in its dealings, and that it was interested in its employees' welfare, not just as employees but as individuals.

The proper integration of new workers must, as I see it, become a co-operative endeavor relying on the combined talents of labor executives and business leaders, of business and labor management everywhere.

Strangely enough, the worker *will* find security in a group anyway. It is a question of where he will find it: with the malcontents, where he will sneer and jibe at his straw boss and be unreceptive to the company story, or with the co-operative, well-assimilated workers.



"A telephone company which enjoys good community relations is a strong company."

"Positive Recognition"

THIS BRINGS up my second condition needed to arrive at a conductive atmosphere. The second requirement is *positive* recognition. You've probably already guessed what this means, or perhaps if you are a supervisor you already know that positive recognition means extending acknowledgment for work accomplished rather than dwelling on the negative approach that the worker could do more. We all know that in time this approach will pay off.

But this positive recognition implies something else, too, something which very likely is more important

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"Have worries about service demands caused us to forget many of the smaller aspects of our business???"

Small Company Talk

By BILL CORMAN

HI, NEIGHBOR! For the past several years, the emphasis in the small company end of the telephone business has been on such major problems as money, expansion, construction, rates, etc. And rightly so, for that is where the emphasis should be. And if your company is still in need of an expansion program, a financing program, a new rate increase, then on that problem is where your attention should be.

But many companies have completed the major portion of their "big" problems — they have new plant, a new central office system, a new rate structure, and it is to such companies that this present article is addressed. For so many years we have been stacking up held orders, worrying about keeping up with the demand, and such like, that we have forgotten about many of the smaller, but still important aspects of our business.

All of us who have been in the telephone business for some length of time know that people like to have their service improved, they like to have the telephone company spend a lot of money installing a new dial system, and they are appreciative of the fact that their telephone company is going ahead and doing a job — for a while. And then they forget.

Where once we got complaints that the subscriber couldn't get *any* answer from "central", we now — with our new and far superior system — get complaints that the answer is *slow*. Where once a subscriber complained that he got a slow answer one time out of two, he now complains if he gets a slow answer one time out of twenty; and where he once considered a slow answer was half a minute, he now considers a slow answer is anything more than five seconds.

"Left-Handed Compliment"

INSTEAD OF complaining about this quirk in human nature — that of quick forgetfulness — we should take it as a left-handed compliment when people can find nothing in our business to criticize but the small things.

To those companies, then, who have their big jobs over, and whose subscribers are now complaining about small things, I have a suggestion.

Like many of the things I write, the idea is not original. This one came from a conversation I had about two years ago with an oldtimer in the telephone business. "You young fellows," he said, "really have it easy. All you have to worry about is getting enough money and plant together to try to fill your demand. But when I was coming up, we had to *sell* telephone service."

They did have to sell service, for I remember some of it myself. Telephone companies put on all sorts of promotion schemes — employee contests, free installation charges in certain months (and our low installation charges at present, incidentally, are still a mis-placed carry-over from those days), advertising sprees to try to sell service, and many others.

Somehow or other, I think all of these things I have been talking about up to now, can be put together into an idea that will be helpful to the telephone company in the position I have described. Quick forgetfulness, complaints on small things, the idea of selling service — all of these call to mind the idea that maybe some of our subscribers complain because they don't have the kind and amount of telephone service that they need, and don't ask for what they need because they don't know what we have to offer. For the specific subject of this article, then, let's see what we can sell to our business subscribers in addition to what they already have. And let's just don't sell them any old thing — let's look into it and sell them on what they need and on what will be valuable to them. All telephone people know about the things that I am going to list, but I suspect that many of us have forgotten about them because we had more important things on our minds. Let's start with the simplest, and least costly, and work up to the more expensive types of service that we can sell them: —

(1) *Additional listings in the telephone directory.* A man named John Jones has a grocery store that he calls the "Corner Market". Half the people known it as Jones Grocery, others as the Corner Market, etc. We know they do, because that's how they ask information for it. So, armed with these wrong references to information, we go to Mr. Jones and explain that he is probably losing considerable business because people can't find his business' name in the directory. We point out that one lost sale a month will more than pay

(Please turn to page 46)

● This fisherman is obviously telling a fish story—not even a whale could be that big. But it's no fish story that the next pole is a long way off, because those poles are strung with Amertel 135.

When you use Amertel 135 you can space your poles 2½ times as far apart as if you used ordinary BB wire. That means you use fewer poles, less pole hardware . . . you dig fewer holes. Most important, you cut costs on pole installation and maintenance.

Amertel 135 has better voice transmission characteristics, too, and lower electrical resistance. We'll be glad to send more information if you'll write the American Steel & Wire Division, Rockefeller Building, Cleveland 13, Ohio.

AMERICAN STEEL & WIRE DIVISION, UNITED STATES STEEL CORPORATION
GENERAL OFFICES: CLEVELAND, OHIO

COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO, PACIFIC COAST DISTRIBUTORS
TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA., SOUTHERN DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

"He was almost as long as from here to the next pole."

LOOK FOR THIS TAG
It is your assurance of highest quality wire.

U·S·S AMERTEL

TELEPHONE & TELEGRAPH WIRE

UNITED STATES STEEL

for the additional listing. Result, we sell him on something that increases his business, our revenue, and decreases the number of our information calls.

Or John Jones and Sam Brown are in business together as The City Realty Company. They should have two extra listings, one under the "J's" as John Jones office, and one under the "B's" as Sam Brown's Office.

Or Dr. John Jones misses a lot of his calls when he is out of the office. He is, say, a bachelor, or else is married and his wife is away from home on many days at the same time he is out of the office. He can arrange with someone to take calls for him, and we can sell him an additional listing such as "When no answer call 6065".

The examples are endless. Additional listings can many times be of great value both to the subscriber and to the telephone company, and to both far beyond the amount of rental charges involved for the listing.

(2) *Extension telephones.* As I study the use of business telephones, it has gradually dawned on me that the *exact placement* of telephone instruments is of large importance both to the subscriber and to the company. A telephone within easy reach of a person's usual working position is a pleasure to use. That same telephone three feet away is a constant headache. Easy accessability of the instrument becomes more important the more it is used — and, in reverse, easy accessability encourages more use. So, in the first place, the telephone company would do well to try to see that the original instrument is well placed. Many times, more times than not in businesses I suspect, one place for telephone use is not enough. An extension is called for, and should be sold even if the customer does not think of it. A little thought on the subject, applied specifically to each of your business subscribers, will tell you whether or not they could use an extension to good advantage. And as you think about it, you will realize many advantages, from the subscriber's point of view. Examples of needs are endless; I will list only a few: businesses with two principal officers — an extension so that either can answer from his own desk; a store with two departments, separated by several feet, both of which need to use the phone; any residential home with two stories; residences that are long and where the bed-room wing is distant from the living-kitchen wing; by bedsides (if I just had one telephone in a house, that is where it would be); in the kitchen; businesses that are small and have adjoining living quarters; and many, many others. The advantages to the subscriber are almost without limit.

Worth Repeating

Have you ever noticed that a knocker is always outside of the door? — Red Foley, Milwaukee Journal.

• • •

Never Before was our country so rich in labor-saving devices and material comforts, yet we grow more and more anxious. We worry about episodes in the past that cannot be altered, and we are anxious about events of the future that may never happen — John Sutherland Bonnell, D.D.

• • •

It is the studying that you do after your school days that really counts. Otherwise you know only that which everyone else knows. — Henry L. Doherty.

• • •

When the white men discovered this continent, the Indians were running it. There were no taxes. There was no national debt. The women did all the work . . . And the pale faces thought they could improve on a system like that! — Brevities.

"Free Installation of Extensions"

BUT NOW switch over and think about it from the telephone company's point of view. It is my own opinion that, almost, we could afford to install many extensions free of charge. They save many calls because the subscriber can get to the telephone before the calling party hangs up — and later calls back to try again, or complains to the service department, "because I know those people are home, so there must be something wrong with their telephone".

Extensions, correctly placed, encourage use of the telephone, which is to our advantage. They save tempers — "got me out of bed in the middle of the night for a wrong number!" It's not nearly so bad when the telephone is right by the bedside. Increased pleasure in using the telephone accrues to the benefit of the company in better regards toward the company. These are a few of the benefits which are over and above the additional revenue that the company gets. And when you consider the revenue, that really adds the clincher.

Study your own tariff — if it is anything like average, your extension rate is the clearest profit of any rate you have. How much does it cost you to install the main station, and to serve and service that main station? And then figure how much it costs to install, serve and service the extension. Usually the extension rate is anywhere from ½ to 1/5 of the main station rate, but it costs you much less than 1/5 to install the extention, it costs practically nothing to serve, and the service costs (maintenance) are also low. Just for the fun of it, when you have an hour free some day, sit down and figure how much it would cost you to install an extension on every main station that you have. Then figure your extra revenue against the extra depreciation, maintenance, and other expenses. If you do it, the figures will amaze you.

(3) *Additional incoming lines or additional main stations.* Busy businesses need two incoming lines, and while the income to the telephone company is the same for the second as it is the first, the cost is not as high. The plant involved will be about the same, outside plant that is, but central office plant does not have to be in proportion, for there will be relatively fewer calls on the second line than on the first, or, saying it another way, there will not be twice the number of calls on both lines that there used to be on one. And again, the advantages to the subscribers are numerous.

For example. We noticed that one of our business telephones was often busy for long periods of time both on local and on long distance. We started tallying the number of busy reports that we had to give on that line

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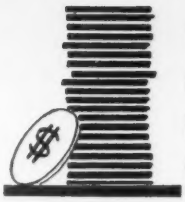


This new Telephone Engineer feature points up operating problems which have been solved by telephone company employees.

THE MANAGEMENT FORUM

Conducted by JOHN G. REYNOLDS

This month your Management Forum discusses — (1) The two-ticket method of handling toll calls, (2) "Tone of Service", (3) The CLR method, (4) Explaining taxes to the subscriber, and (5) Toll tickets.

Collect Toll Calls

THE PROBLEM: — Eliminating the "two-ticket" method of handling toll calls.

THE SOLUTION: — There are still some small Independent companies that insist on handling "collect" toll calls by the "Two Ticket" method for billing purposes. In other words, the terminating office receiving the collect call takes an "In" ticket and times the call for billing purposes. The originating office which also has written a ticket on the call to record the details does not time the call but marks the ticket at the top with a "T" to indicate that a ticket was taken at the terminating point.

An "In" ticket is required on collect calls at the terminating point on certain calls in accordance with the Toll Operating Practice, as in the case of pay station calls where the coin collection must be supervised. An "In" ticket is not required on collect calls for billing purposes if the two companies involved will get together and arrange to mail to each other, for billing, the collect tickets involved. Since the number of collect tickets between small exchanges is usually small, it is suggested that they be mailed to each company's billing center in five-day lots.

"Tone Of Service"

THE PROBLEM: — Encouraging employees to improve "Tone of Service."

THE SOLUTION: — According to *W. B. Crays*, traffic superintendent, *Ohio Consolidated Telephone Co.*, one of the most important items affecting public relations as it applies to the traffic employee is *"Tone of Service."*

The word "overtone" is defined as a musical term, "a harmonic" heard over and above its fundamental tone.

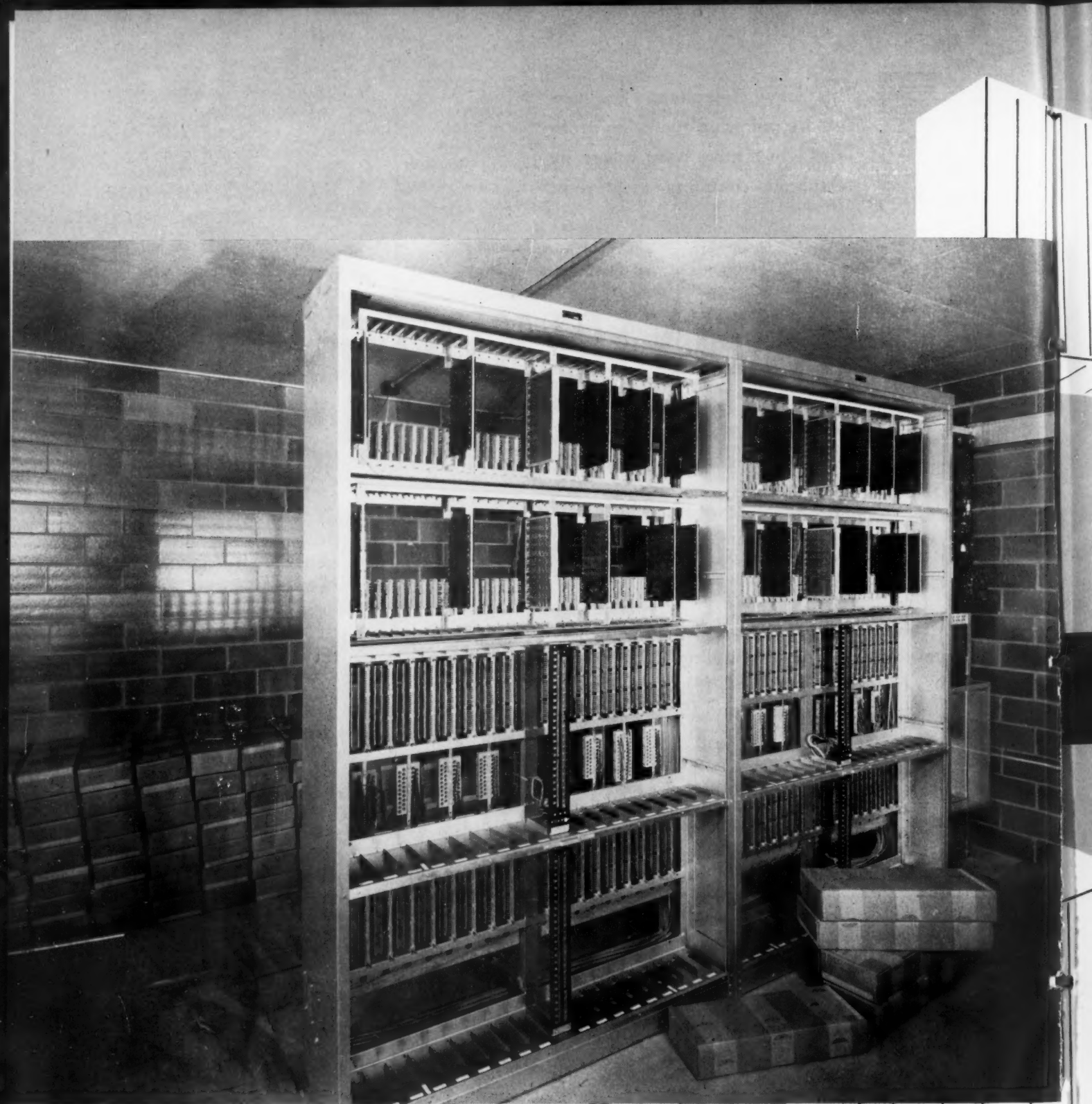
It is an added pleasantness, an added naturalness, an added willingness to serve and to satisfy. This overtone and the added services "given with a smile" (in the voice) is a step toward pleasing service, and perhaps we should add, personalized service.

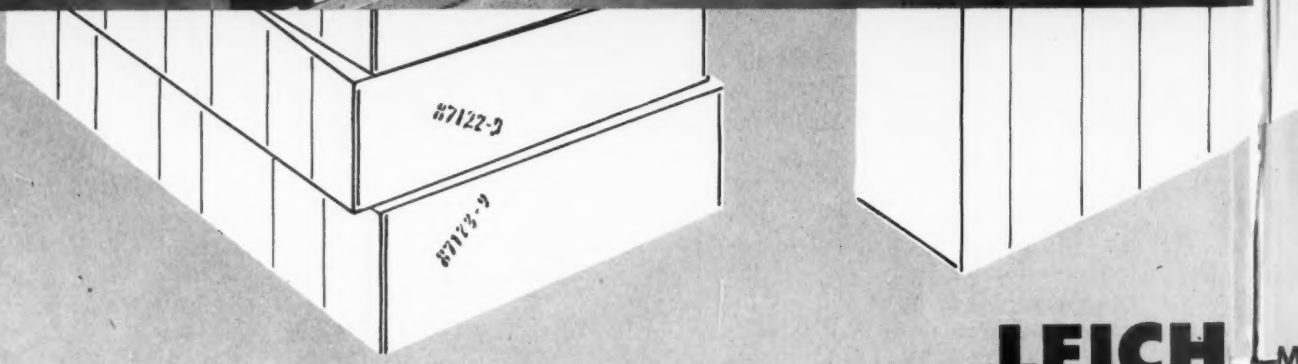
In the administration of activities to insure a personalized service, experience indicates that the best results are obtained when *definite* and *specific plans* for *improving the tone of service* are made an integral part of all central office activities. While campaign and special features from time to time serve to focus attention and stimulate interest, they cannot take the place of attention given to "tone of service" in the training of the operating force and in day-to-day operations.

The supervisor's job is to bring out *the best* in each co-worker, being sure to preserve inherent qualities of naturalness and fostering an eagerness to serve. It is a continuing activity starting with the employment and induction stage and then progressing through the initial and all subsequent training periods — "Operator," "Supervisor," "Chief Operator," and so on.

Since the resuls are largely dependent upon the *will-to-do* and enthusiasm of the force, it requires continuing interest in all levels of management to maintain a high level of performance. Management's interest is providing adequate tools, that is, positions, circuits, and comfortable quarters for traffic personnel.

A well-planned program to improve "tone of service" has two basic requirements — "*Inspiration*" and "*Instruction.*" It is important that those administering the vocational guidance program, understand the possibilities of these activities and carefully appraise local requirements so that the





LEICH

It's easy to install

A LEICH DIAL SYSTEM

This photograph shows another Leich Dial System being installed in Wisconsin. It illustrates how simple, quick, and relatively inexpensive it is to install a Leich Dial System.

Leich Dial Systems come in steel frame bays, each bay having a capacity of 100 lines and 15 links. Two men can carry a bay. All the equipment, lines, links, selectors, etc., comes in small packages, as illustrated, is merely jacked-in on the bays. Stacked in boxes along the rear wall are all the parts, factory tested, ready to be jacked in on the switchboard bays. Before this is done, the power equipment is hooked up, jumpers are run to the main frame and the board is ready for testing and cutover.

If additional lines or links are needed, they are also jacked-in until each bay is filled to capacity. Should additional equipment be needed, extra bays may be added just as the original ones were installed.

It takes only about 80 man hours per 100 lines to install a Leich Dial System.

Telephone men have purchased Leich Dial Systems for their dependable, all-relay operation and jack-in flexibility. They have been pleasantly surprised at the savings in time and money on installations. Leich Sales Corporation, 427 W. Randolph, Chicago 6, Illinois.

MANUFACTURERS OF TELEPHONES, SWITCHBOARDS AND RELATED APPARATUS SINCE 1907

program will reflect consideration of such factors as "*Experience of the Force*," "*department morale*," *service performance*, and the *inspirational qualities* of the *supervisory forces*.

The greater the employee participation in the tone of service program, the more effective and lasting the benefits of the program will be.

In several *Ohio Independent telephone offices* a recording device has been provided which records not only the operator's voice, but also that of the calling subscriber as well as that of the distance operator.

When this recording is played back to the operator, she is able to detect her own tone of voice and will, of her own accord, attempt to improve the quality of her work.

Inspirational effort is required to create and maintain interest among the forces, and the results will be directly proportional to the success of this undertaking. The degree of interest created depends largely on the development of good employee morale, the level of management interest, and the quality of central office supervision.

Central office supervisory forces must know their people, be sincerely interested in their individual needs, be fair and considerate, and set a good example, thus creating a desire on the part of the force to render an efficient and pleasing service.

Although interest is fundamental, simply having the desire is not enough. Operators must have the ability to recognize opportunities to make the service more pleasing and the right judgment as to what action to take that will be appropriate and adequate to meet the customer's individual needs. This is a matter of instruction — in groups or with individuals "personal interest becomes greater when understanding is greater."

Group instructional activities such as skits, moving pictures, talks, meetings, on-the-job discussions, posters and feature programs serve to define general aims of a pleasing service and to illustrate specific opportunities for application in the handling of calls. They contribute, moreover, to the inspirational phase of the program as they are effective in arousing and sustaining interest in the job to be done.

While group instruction is valuable, particularly when quick general coverage is desired, improvement in "tone of service" is achieved principally through instruction of the individual operator in her *initial* and *subsequent training*. This is the backbone of traffic's part of management, and its success depends almost entirely on the caliber and performance of the *supervisory force* at all levels.

Therefore, in promoting pleasing service to the customer and building "better public relations" the first responsibility of management is to insure that the supervisory group is qualified to command respect in leadership, which is required of them along inspirational and instructional lines. This, of course, is a matter of proper selection and training of supervisory people.

Management

THERE HAVE been times, perhaps not so long ago, when "management" and "ownership" meant almost the same thing. But today, the profession of management is surely made up chiefly of men whose greatest interest is not that of primary ownership, but in seeing why and how a job should be done: men who are willing — in return for a chance to get ahead and fair remuneration — to step up and take the responsibility for getting it done. The key characteristic in such a man of course is his willingness to be responsible; and the man who does not feel the binding obligation of his responsibility, and attempt to live up to it, is not managing, no matter what the name of his job may be.

The principles of management are bigger than the ebb and flow of social and political fashions, and cannot be thought of as being blocked or superseded by them — for true principles never change. It is only the conditions under which management must be exercised which change. The technique and ability of management must adapt itself. The responsibility that goes with management is not a conditional thing, to be laid aside with the advent of a labor-management committee or a difficult set of regulations. The responsibility is full and permanent, and when it is gone, the management is gone too.

Handling Toll Calls

THE PROBLEM: — Getting the small tributary exchange to accept the CLR method of handling toll calls.

THE SOLUTION: — In some instances, especially with small connecting company tributary exchanges, it has been very difficult to get them to accept the CLR method of handling toll calls. Some of this difficulty has been due to inadequate tributary toll circuits. However, it usually develops that the small exchange operator feels that it is *her* subscriber who is placing the call and she is very reluctant to connect *her* subscriber direct with the toll center operator and hold him on the line. She feels that she is entitled to complete *her* subscriber's call. The solution to this problem is to sell the small exchange management on development of a better speed of toll service for its subscribers; savings in valuable circuit usage; and a reduction in the work load at the tributary office.

It is also difficult in many instances to get the small connecting company tributary office to agree to ticket and time toll calls to the toll center and its tributaries.

Many Independent companies have made it a practice to permit their tributary exchanges to ticket and time toll calls routed over Independently owned circuits in order to keep this low message revenue traffic out of the toll center office where operating costs are substantially higher.

This can be satisfactorily accomplished if the tributary exchange personnel is properly trained in toll operating procedures. The small connecting company tributary can also be induced to accept these ticketing privileges if assistance is furnished to them by the company owning the toll center office.

In most cases, the connecting company tributary does not have a tim-

ing device and no routing instructions or rate tables. A suitable timing device can be obtained for a nominal sum and the company owning the toll center exchange should furnish the routing instructions and rate tables, as well as the necessary training assistance required. In accepting this plan, the connecting company tributary receives additional toll compensation for ticketing these calls; is able to complete a large percentage of its own customers' toll calls; and the toll center exchange reduces its work load when it is not involved in ticketing and timing a large volume of low message revenue traffic.

"Taxes"

THE PROBLEM: Making subscribers realize how Federal, State and Local Levies add plenty to their telephone bills.

THE SOLUTION: Several companies are using bill inserts and advertisements urging subscribers to take a good look at the total of their telephone bills, and asking, "Do you have any idea how much of that total goes for taxes or how large is the tax bite on telephone users and the telephone industry?"

Many of the ads then point out that taxes are necessary to run our governments, Federal, State and local and use the following questions and answers to show that users of telephone services are bearing at least their full share of the burden — and maybe more:

(1) Q. *About how many different taxes are levied against telephone service?*

A. The figure varies from state to state, but there are at least a half-dozen different taxes on telephone service and often many more. In Illinois the total is fifteen. Some of these are: excise tax, corporation income tax, gross receipts tax, public utility tax, franchise fees, capital stock tax, property taxes and unemployment compensation.

(2) Q. *Who pays these telephone taxes?*

A. There are two types of taxes. One is the federal excise tax on local and toll service. Telephone companies act only as collecting agents for the excise tax, turning all money collected over to the government. The second type are the taxes placed on telephone companies and included in their operating costs. These taxes are ultimately paid by telephone subscribers, too, because in the telephone business — as in nearly all other businesses — the operating expenses must be passed on to the customers in the price of the product or service sold.

(3) Q. *On the average, how much would you say is the tax per month on each telephone in the country?*

A. If you said $2.70 your were right. This was the average tax on all the Bell System telephones in the nation in 1951. Multiply this by more than 40 million telephones and you have an idea of the total monthly telephone tax bill.

(4) Q. *What is the size of the total yearly telephone tax bill?*

A. It was enough to keep the U. S. Government's European Aid Program going for four months. The aid program cost $3,331,000,000 last year and the tax bill paid on telephone service amounted to approximately $1,200,000,000.

(5) Q. *Have we always had these heavy taxes with us?*

A. No. There have been startling changes in the past few years. To cite a few typical examples: Down in Maryland the Chesapeake and Potomac Telephone Company paid a federal, state and local tax bill of $3,811,431 in 1947. In 1951 the same company coughed up $11,828,529 for the same taxes . . . the taxes more than tripled in those five years. Or in Illinois for instance, excise taxes rose 1400% between 1940 and 1951. The New York Telephone Company paid a tax bill, including excises, of 46 million dollars in 1940. When 1951 rolled around, New York Tel. was paying a whopping 202 million dollars in government levies. Of course, a part of these increases is due to the growing number of telephone users over the past decade, but the tax rates themselves have increased materially.

(6) Q. *Do other businesses pay as much in excise taxes as the telephone business?*

A. The telephone business bears one of the heaviest excise tax burdens in the land in relation to total revenue. There are only two, the tobacco and distilling industries, which carry a heavier percentage of taxes.

(7) Q. *How did the excise tax on telephone service originate?*

A. The first excise tax was placed on communications service during World War I. It was repealed in 1924 because it "was not only a burden on business, but was a tax on a public utility so widely used as to be a necessity." In 1932 an excise tax was again imposed on communications services. During World War II this excise was raised to 15% on local telephone service and to 25% on toll calls costing 25c or more — one-fourth of the amount charged

(Please turn to page 54)

Leaning

LEANING IS THE HABIT of expecting others to do for you the things you should do for yourself. Leaners are found in all walks of life — particularly in business. There are far too few who can be trusted to go ahead on their own.

The habit of leaning on others instead of thinking and doing for one's self is one of the reasons why really dependable men are so difficult to find in industry — and why so many people fail in their own enterprises.

There are varying degrees of leaners — from the outright loafer to those who are still in the beginner stage of leaning. These latter can be salvaged. The most effective method is to remove all props. They will then either fall down or learn how to stand alone.

So if you have inclinations to be a leaner, kick out the props. You may feel they are holding you up, but more likely they are holding you back. Stand squarely on your own two feet. —*Tim Talks.*

In Offices . . .

- Above: Type 1-A Monophone
- Right: Type 40 Monophone

S...*Automatic's Monophone*
EXTENSIONS PAY BIG

Check the offices in your exchange area—
you'll find a wealth of prospects for extension telephones!
Secretaries and junior executives in general offices—
personnel in factory offices—all need extensions.
(So do stores, garages, many other locations.)
Extension business PAYS!

Type 40 Monophone is your most popular extension instrument!
Placed on a desk, table, or shelf, it looks smart, modern.
Type 1-A Monophone is your ideal instrument
whenever a subscriber wants an especially *compact* telephone.
You'll be delighted with the low maintenance of *both* types,
because their superior construction keeps them trouble-free
for long, economical years.

Type 40 Desk Monophones and Type 50 Wall Monophones
cost only $24.15 with dial, $18.00 without,
with 55 cents extra for harmonic ringing.
Type 1-A costs $23.05 with dial, $16.90 without,
and is used with a Type 32 Ringer Box when a ringer is required.

Order Monophones today for *profitable* extension business!

AUTOMATIC ELECTRIC

Originators and Developers of the Strowger Step-by-Step "Director" for Register-Sender-Translator Operation . . . Machine Switching Automatic Dial Systems
Makers of Telephone, Signaling and Communication Apparatus . . . Electrical Engineers, Designers and Consultants

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MANAGEMENT TIPS

Education

AN EDUCATED man is not one whose memory is trained to carry a few dates in history — he is one who can accomplish things. A man who cannot think is not an educated man, however many college degrees he may have acquired. Thinking is the hardest work anyone can do — which is probably the reason why we have so few thinkers. There are two extremes to be avoided; one is the attitude of contempt toward education, the other is the tragic snobbery of assuming that marching through an educational system is a sure cure for ignorance and mediocrity. You cannot learn in any school what the world is going to do next year, but you can learn some of the things which the world has tried to do in former years, and where it failed and where it succeeded. If education consisted in warning the young student away from some of the false theories on which men have tried to build, so that he may be saved the loss of time in finding out by bitter experience, its good would be unquestioned. —*Henry Ford.*

• □ •

Ideals

YOU ARE TODAY where you thoughts have brought you; you will be tomorrow where your thoughts take you. You cannot escape the result of your thoughts, but you can endure and learn, can accept and be glad. You will realize the vision (not the idle wish) of your heart, be it base or beautiful, or a mixture of both, for you will always gravitate towards that which you secretly most love. Whatever your present environment may be, you will fall, remain, or rise with your thoughts, your vision, your ideals. You will become as small as your controlling desire; as great as your dominant aspiration. —*Selected.*

• □ •

Office First Aid

OFFICE ACCIDENTS are not frequent and the results are usually not serious, yet accidents can and do occur wherever people work. In small offices as well as large, provision for prompt first-aid treatment of minor on-the-job injuries will pay off.

A finger caught in a closing desk drawer, a barked shin or skinned knee, or a file clerk's paper-cut finger, may seem nothing to get excited about, and in fact no more may be required than application of an antiseptic and an adhesive bandage. Mose office injuries are of this kind, but if not attended to promptly such minor hurts always pose the threat of infection, with loss of working time and possibly much more serious consequences.

A first-aid kit and a compact first-aid guide for the use of employees, located in an inconspicuous but readily accessible spot, are good insurance against any such consequences. A kit for the small office should contain the following basic items:

Gauze (roll), absorbent cotton, adhesive bandages, sterile gauze pads, antiseptic, burn ointment. —*Best's Life News.*

by the telephone companies for the call. These were known as "War Tax Rates" and the law (in 1943) provided that they would be terminated six months after hostilities had ended. However, in 1947, legislation continued these "War Tax Rates" without definite termination date and they are still in effect today.

(8) Q. *Does the telephone excise compare favorably with other excises?*

A. It depends on the way you look at it. Take the toll call for instance. The 25% tax on toll calls is more than you pay on almost any other product or service. Toll calls are taxed higher than jewelry, cosmetics, luggage, furs or cabaret entertainment — all luxury items. A juke box is taxed $10 a year while the average yearly excise tax on each telephone is more than $15.

By way of contrast, electrical energy, the product of another utility, bears no federal excise tax.

Toll Tickets

THE PROBLEM: — Getting the small company tributary to accept toll tickets taken by the toll center for billing purposes.

THE SOLUTION: — Some small connecting company tributaries are reluctant to accept toll tickets taken by the toll center for billing purposes. Many of these small companies insist on checking with the toll center chief operator or clerk each morning on all calls placed from the tributary exchange the previous day to determine the time and charges on each toll call. In most instances the tributary operator has made a memorandum ticket on each call.

This problem can be overcome by selling the tributary exchange on the fact that the tickets taken by the toll center office are of no value to the toll center after they have been check reported for settlement purposes. In accepting the toll tickets written at the toll center for billing purposes, the tributary exchange saves considerable work time and there is a savings to both companies of valuable toll circuit usage. Time and charges requested by the tributary customer can, of course, be secured at any time. The toll center company should also make sure that toll tickets are promptly mailed to the connecting company tributary.

Questions and Answers

Conducted By

JAY G. MITCHELL

In this issue Mr. Mitchell discusses — (A) Puzzling Operator's Set Trouble, and (B) Inductance of Relay Winding

---

QUESTION: *We have a two position magneto switchboard and this morning both positions were dead for awhile. Will you tell me what could be the trouble as it cleared itself? Stamped and directed envelope is enclosed for prompt reply. It was the operator's circuit that was dead.*

ANSWER: This inquiry is one that cannot be answered at long range because the information given is not sufficient for an intelligent effort at analysis. The final sentence of the inquiry indicates that the subscribers were able to call in and possibly to talk with other stations than their own. In that case the operation of the switchboard was carried on by a telephone to which the calling lines were connected by one of the switchboard cords and their orders taken and the connection established in that way without the necessity of using the regular operator's set.

To be of much help in this case it would be necessary to have the following information.

(a) What make of switchboard is involved?

(b) Could the operator hear the calling subscribers while unable to make herself heard?

(c) What is the source of the current for the operation of the operator's set? 1. Is it a small rectifier connected with the 110 volt A. C. light circuit? 2. Are the operator's sets on both positions supplied with current from the same source?

(d) Is the type of operator's equipment the suspended transmitter type or the head and chest type?

(e) Have all the wires leading to the operator's set jack been carefully examined for broken, loose or poorly soldered connections?

(f) Is the operator's *plug* (this is important) in good condition (not worn or chipped or illfitting in the operator's set jack)?

(g) Is the cord leading from the operator's plug to the transmitter or head and chest equipment frayed or old?

(h) If the operator's transmitter is of the suspended type is it in good order (with the back of the case firmly in place)?

(i) Are the cords leading to the transmitter of the operator's set (and the receiver) in good condition with their tips securely held in their proper place by the screws for that purpose?

(j) Is the two wire connection of the operator's set wiring to the listening keys (the operator's set common wires) firm and *well soldered* in place?

(k) Are either of the two operator's sets noisy when in working order (subject to a frying or sizzling noise in the operator's receiver?)

(l) If batteries are used for the supply of operating current to the operator's telephone sets have they been recently renewed or changed and are all the wire connections *at the batteries* tight and well secured?

In conclusion it is fully realized that a case of trouble of this sort is *very serious* indeed because it is apt to cause a total stoppage of service in the exchange where it occurs. For this reason it is my suggestion that you send in a sketch or blue print of your switchboard circuit if you have not easily found the trouble and I will be very glad indeed to make some helpful suggestions on that basis.

QUESTION: *In the description of some relays which were advertised for sale we noted that the data as to the contact spring pile-up was given along with the ohmic resistance of the winding and the inductance at 0.004 milliamperes. It has been my understanding that the inductance of any given electro magnet, is determined by the character of its magnetic circuit, that is the iron frame, armature, air-gap, etc., and the number of turns in the winding. Please comment on the inclusion of the 0.004 milliampere in the description of the relay in question from the standpoint of its inductance.*

ANSWER: This is a point that is often entirely overlooked by the inexperienced circuit designer with results that are sometimes very disappointing. It may be explained, with a fair approach to technical accuracy, as follows. When the electric current flowing through the winding of any electromagnet with an iron core is a steady current it will be limited by the applied E.M.F. and the ohmic resistance of the winding except at the initial closing of the circuit in which the winding is included. The inductance of the winding has the effect of offering opposition to the *establishment* of the current flow in the beginning and also of offering opposition to the *discontinuance* of the current flow when the circuit in which the winding is included is interrupted. In other words the inductance of an electromagnet opposes the *discontinuance* of an existing current through its winding and opposes the *establishment* of a current flow when there is no existing current flow at the instant that the circuit is closed. After the current flow has once been established at a steady value the opposition offered by the winding of the electromagnet is solely that due to its ohmic resistance.

Now if it is assumed that the current in the circuit in which the electromagnet winding is included is an

alternating current it will be obvious that twice in each cycle the property of the electromagnet winding roughly outlined in non-technical terms above causes an opposition to the establishment and discontinuance of the current through its windings because of the inductance. An illustration of this fact is the winding of bridged Clearing Out Drops in Magneto Switchboard Cord Circuits where the inductance of the drop winding is sufficiently high to prevent appreciable transmission loss of the high frequency voice carrying currents from the tip to the ring conductor of the cord while permitting the much lower frequency ringing off current to pass through the winding and operate the Clearing out Drop. In other words the *inductance reactance* of a given electromagnet coil winding is higher when the impressed current in the circuit is alternating in character and of voice carrying frequency than it is when the impressed current in the circuit is alternating in character and of the lower frequency employed to operate the ringers of magneto telephones. For the same electromagnet winding therefore the inductance reactance is determined, in part, by the frequency of the impressed alternating current at its terminals.

Now in an electromagnet the passage of any current through the winding creates a magnetic field in the iron of the core. This magnetic field of strength is directly fixed at its normal strength by the number of turns in the winding and the strength, in amperes, of the current flowing. The product of the number of turns and the strength in amperes is known by the self explanatory term "Ampere-Turns." An illustration of this class of electromagnet is the battery feed supervisory relays employed in many common battery switchboards where the magnetic field in the core is sufficiently strong to operate the relay contacts and the supervisory lamp circuits when the steady current taken by the connected active line circuit is passing in the winding.

Up to a rather definite point, for any given grade of iron core, any increase in the strength of the steady current flowing in the winding of an electromagnet causes an increase in the strength of the magnetic field in the iron core, air gap and armature. This increase in the strength of the magnetic field in the core is not proportional to the increase in the strength of the steady current passing through the winding, however, but it will be increased as the strength of the steady current flowing in the winding is increased until a well defined point is reached at which further increase in the strength of the steady current flowing in the winding will not be productive of a corresponding increase in the strength of the magnetic field in the magnetic circuit.

As the steady current is *decreased* in strength the strength of the magnetic field will follow by a reduction but as in the increasing portion of the cycle the decrease will not be fully proportional to the decrease in the strength of the steady current. These facts are well illustrated by the graph known as the "Permeability Curve" for magnetic circuits and for certain kinds of iron core, etc.

Now the inquiry can be answered. When the relay in question is carrying a steady current in its winding of 0.004 milliamperes, as specified, its response to the establishment of a current flow in its winding cannot be as vigorous, due to the steady current flow, as it would be in there were no magnetic field in existence in the iron core, armature etc. of the relay. Therefore when it is carrying a steady current of 0.004 milliamperes, as specified, its inductance reactance (opposition to the establishment of a current flow in its windings) will be *lower than it would* be if there were no steady current flow in the winding.

Probably this an oversimplification of this matter but if the reply is not clear please write in again.

COMING CONVENTIONS

"There has never been a time . . . when it was more necessary for telephone people to take common counsel upon common problems."

Louisiana Telephone Association, Jung Hotel, New Orleans, Feb. 12 and 13.

Minnesota Telephone Association, Hotel St. Paul, St. Paul, Feb. 17, 18 and 19.

Kentucky Independent Telephone Association, Phoenix Hotel, Lexington, Mar. 3.

Texas Telephone Association, Baker Hotel, Dallas, Mar. 9, 10 and 11.

Nebraska Telephone Association, Cornhusker Hotel, Lincoln, March 24, 25.

Iowa Independent Telephone Association, Hotel Fort Des Moines, Des Moines, April 7 and 8.

Illinois Telephone Association, Hotel Pere Marquette, Peoria, Apr. 15, 16, and 17.

Ohio Independent Telephone Association, Deshler-Wallick Hotel, Columbus, April 20-21 and 22.

Wisconsin State Telephone Association, Loraine Hotel, Madison, May 6 and 7.

Indiana Telephone Association, Claypool Hotel, Indianapolis, May 12, 13, and 14.

United States Independent Telephone Association, Executives' Conference, Edgewater Beach Hotel, Chicago, May 25 and 26.

Pennsylvania Independent Telephone Association, Pocono Manor Inn, Pocono Manor, June 3 and 4.

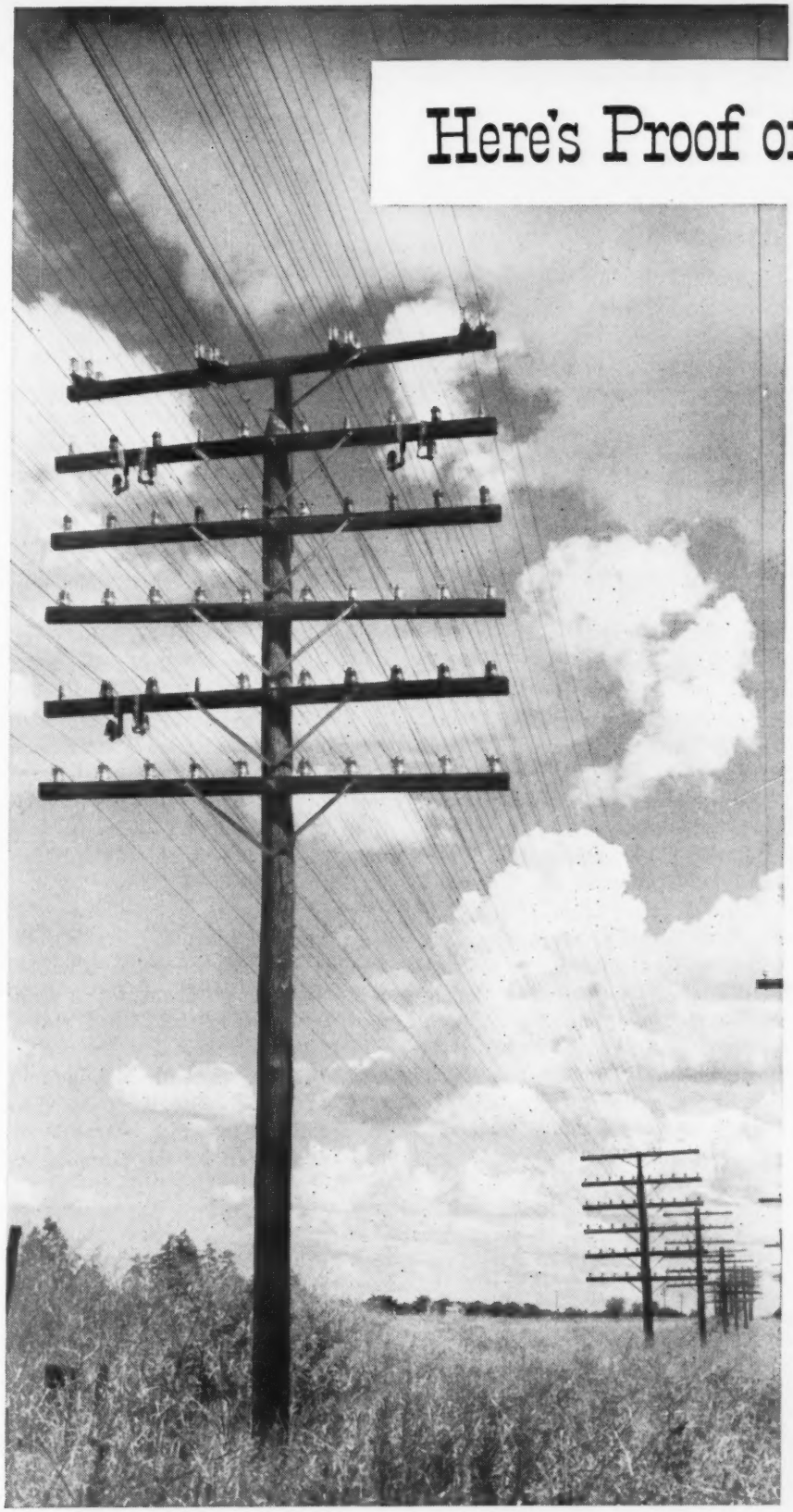
Oregon Independent Telephone Association and Washington Independent Telephone Association (Joint Convention), Chinook Hotel, Yakima, Wash., June 12 and 13.

California Independent Telephone Association, Ambassador Hotel, Los Angeles, June 18 and 19.

Rocky Mountain Telephone Association, Newhouse Hotel, Salt Lake City, Utah, September 2 and 25.

North Carolina Telephone Association, Carolina Hotel, Pinehurst, October 22 and 23.

"There is no quick, easy way to the acquisition of knowledge . . . but at a convention there will be ready-made answers to perplexing problems."



THESE PRESSURE-CREOSOTED POLES, owned by Southwestern Bell and located near Highway 75 between Dallas and Houston, Tex., have been in service since 1912.

Here's Proof of Performance...

Southwestern Bell has had 40 years of service from these pressure-creosoted poles

● In 1912, Southwestern Bell Telephone Company erected these poles to carry a toll line from Dallas to Ennis, Tex., as one link in a through route from Houston to Dallas. A total of 1240 poles were erected in the 31-mile section and each was pressure-treated with Creosote Oil at 6 pounds retention.

Today—40 years later—more than 42% of the original poles are still in service. Most of the replacements took place in 1948 when the line was given a major overhaul. The poles left in place at that time were sound, showed no signs of rot or splitting, and appeared good for 5 to 10 years of additional life.

When you use a wood preservative, let service records like this be your guide. They are another good reason why users of preserved wood make Creosote Oil their first choice.

Creosote Oil contains not one but many compounds whose toxicity and permanence ward off attack by such wood destroyers as termites, fungi, dry rot and marine borers.

When you use treated wood, be sure it is pressure-creosoted with U·S·S Creosote Oil. It is the product of continuous processing in the world's biggest tar distillation plant. For complete information, contact our nearest Coal Chemical sales office or write directly to United States Steel Corporation, 525 William Penn Place, Pittsburgh 30, Pa.

U·S·S CREOSOTE OIL

USS

UNITED STATES STEEL

Officers of the Florida Telephone Association (l. to r.): J. N. Johnson, Fort Myers, second vice pres.; J. L. McGehee, Marianna, pres.; Josephine Poppleton, Tampa, sec.-treas., and Blair C. Stone, Tallahassee, first vice pres.

Florida Telephone Assoeiation Holds 45th Annual Meeting

BY JOSEPHINE POPPLETON

Secretary-Treasurer,
Florida Telephone Assoc.

ORLANDO, with its giant oaks draped with picturesque spanish moss, beautiful homes, clear lakes, where there is always a profusion of colorful flowers, oftimes referred to as the Central Convention City, being located in the Heart of Florida, the Ideal Convention State, was the meeting place of the Florida Telephone Association in its 45th year.

The two-day convention was held at the Orange Court Hotel with a registration of over 365, which included representatives from every section of the country. Twenty-one nationally-known manufacturing firms were represented and one large room overlooking the beautiful tropical gardens was used for the many interesting displays of the newest in equipment.

Nineteen of the twenty-one member companies were represented at the Board of Directors meeting held at noon on the 13th, at which time the following were elected: President, J. L. McGehee, Marianna; 1st Vice President, Blair C. Stone, Tallahassee; 2nd Vice President, J. N. Johnson, Ft. Myers, and Secretary-Treasurer, Josephine Poppleton, Tampa.

Two new directors were elected: J. B. Kincaid, Jacksonville, and John J. Johnson, Ft. Myers. The Board now consists of the following members: C. E. Archer, Tampa; M. L. Barre, Jacksonville; H. A. Bishop, Starke; P. E. Brannen, Ft. Myers; Carl D. Brorein, Tampa; Carl D. Brorein, Jr., Tampa; Mrs. Allene M. Drew Cantey, Quincy; E. L. Cox, Perry, Florida; B. A. Galloway, Winter Park; J. K. Galloway, Winter Park; J. N. Johnson, Ft. Myers; J. B. Kincaid, Jacksonville; Ralph Maner (Rpr. Mfgrs.), Tampa; J. L. McGehee, Marianna; E. M. Menendez, Tallahassee; Josephine Poppleton, Tampa; Blair C. Stone, Tallahassee; J. L. Sharit, Port St. Joe; R. W. Shriner, Tampa; Max Wettstein, Ocala, and Otto Wettstein, III, Ocala.

The general session, presided over by R. W. Shriner, president, got under way in the afternoon after a pleasant morning spent in visiting with friends and making new acquaintances. The first speaker, C. J. Yates, general commercial manager of the Southern Bell Telephone and Telegraph Co. of Atlanta, Ga., chose as his subject "Current Telephone Problems." Mr. Yates said the basic improvement in the economic condition of the South is mainly responsible for the big increase in telephone service demands.

Mr. Yates was followed on the program by George Richert, secretary and assistant treasurer of the United States Independent Telephone Association in Washington, D. C., who gave an excellent accounting of "Happenings in Washington" in respect to the telephone industry and the country as a whole.

Mr. Richert stated that the economic climate for small business must be kept healthful if the confidence of the investors is to be continued. He called the independent telephone companies excellent examples of small business enterprise, the foundation of the American system of free enterprise, but warned that unrealistic legislative or regulatory policies can prove fatal in this field.

The final speaker of the afternoon session was an attractive brunette, Miss Nina Gouge, Charkow, Ukrania, now a refugee in the United States, who told of her escape from a Nazi concentration camp. Miss Gouge told of what happened to the population in a country in which wheat lands had been seized by the Communists

Florida Association Sec. Josephine Poppleton (left) and Association Pres. R. W. Schriner (right) greet speaker Nina Gouge, Charkow, Lithusia.

George Richert (left), USITA secretary, Washington, D. C., discusses Florida Convention with R. W. Shriner (center), Florida Association pres., and C. J. Yates, general commercial mgr, Southern Bell Tel. & Tel., Atlanta, Go.

central government of Russia in 1917, wherein, the Communists would send the food to Western Europe in exchange for machines and guns, leaving the population little to eat. When the Nazis of Germany invaded, they took advantage of the animosity of Ukrainians to Communist Russia promising rewards and comfort. "Instead," she said, "my people were imprisoned and forced to work inhuman hours of toil in German factories."

Miss Gouge was torn from her family at the age of 16 and forced to work in a 12-hour-a-day factory shift. She escaped from a concentration camp at Breslau and made her way across Germany, sleeping during the daytime in fields and barns, trudging across the frozen countryside at night, until she reached France.

There the hope of coming to America was nearly snatched from her by discovery of latent tuberculosis.

Here in America since April, 1950, she is still greatly impressed by American freedom. A grocery store is a complete fascination.

The banquet was one of the most outstanding events in connection with the convention. 400 persons gathered in the open air in the beautiful Tropical Gardens and were served an excellent meal, enjoying the moonlight and balmy Florida weather with Carl D. Brorein, a past president of the United States Independent Telephone Association and a Director of the Florida Association acting as Toastmaster. This gala occasion was followed by a dance held in the Ballroom of the hotel.

Two separate conferences were held on the morning of the 14th, one a Traffic Conference conducted by George W. Rose, traffic superintendent of the Peninsular Telephone Co. This conference was in the form of a Traffic Quiz titled "Stump the Experts" and the moderator was W. P. Blanks of the Southern Bell, assisted by a panel of experts, Miss Myrtle Kelly, Mrs. Mildred Hudson, Miss Pearl Morrow, and Mrs. Floy MacDuffie. A movie "The Skillful Operator" was presented.

The other Conference, Joint Com-

(Please turn to page 76)

"Panel of Experts" at recent Florida Association Traffic Quiz consisted of: Myrtle Kelly, Mildred Hudson, Pearl Morrow and Floy MacDuffie.

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If you wanted to talk over the telephone business with a customer, wouldn't the best way be to sit in his living room and chat? That's just what The Telephone Hour does for telephone companies each Monday night. This popular radio program—now in its 13th year—brings the telephone story to millions of customers all over the nation, through the world's greatest music and finest talent. Along with the music, warm and informative talks explain what the telephone means to the nation and the part it plays in the life of the individual. Thus, The Telephone Hour adds up to a profitable evening for listeners and telephone people alike.

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Carnegie Hall

November 17, 1952

LILY PONS

FLOOD ON THE KICKAPOO

It was a quiet Saturday morning in Gays Mills, W
Eight inches of rain had pretty thoroughly drey
town — and folks were staying indoors.
Then to Mrs. Wilma Gander, telephone operat
the news! The Kickapoo River was flooding its banks fift
miles above the town!
Wilma Gander didn't hesitate. She immediately had the
town fire siren turned on.
Calls began to pour into the telephone office.
"Where's the fire?"
"No fire! It's a flood! The Kickapoo's over its banks, 15 miles upstream. Get to higher ground as fast as you can."
Quickly the word was passed. People collected such be-
longings as they could carry and made their way to safety.
Mrs. Gander stayed on the job. A telephone lineman called in from the pole on which he was working.
"Come to the office as fast as you can. We've got work to do!"
While Mrs. Gander worked at the switchboard, volun-
teers helped the telephone man make ready for the flood.
They brought concrete blocks to raise the switchboard. A
big wooden box was placed under Mrs. Gander's chair.
Then the men built a barricade across the door and made it
as watertight as possible.
Meanwhile, Mrs. Gander called the Red Cross, the Army
and the National Guard.
At noon, the flood waters struck at Gays Mills, Mrs. Gan-
der stayed at her post, handling calls, reporting the news to
radio stations and newspapers.
"There's five feet of water in the street outside the office now. Me? I'm all right . . . but there's about half a foot of water on the floor."
By the next morning the crest of the flood had passed.
In those 21 hours Mrs. Gander had kept open the telephone
lines vital to public safety, protecting the lives of thousands
of people, and climaxing 25 years of service with the Utica
Farmers Mutual Telephone Company, one of the Wisconsin
companies connecting with Bell System lines. For her out-
standing services, Mrs. Gander has been awarded the Bell
System's Theodore N. Vail Silver Medal. This Vail award
goes to telephone people who display the highest ideals in
good citizenship and service to the community. We think
you'll agree that Wilma Gander did just that.

Studio program for The Telephone Hour. Back page, left, tells a telephone story each week.

Free Business Aids

The following business and technical literature is of special interest to members of the telephone industry. It is current and we suggest you make your requests for copies now while stocks are complete.

A new putty-like electrical insulating compound that comes in a convenient roll and applies like tape has been announced by *Minnesota Mining & Manufacturing Co.*, 900 Fauquier St., St. Paul, Minn. Designated "Scotchfil" brand electrical insulation putty, the black, 1/8" thick, material fuses into a void-free mass after application. It is designed not only to insulate, but also to pad sharp edges as on bus bars, build up cable splices, and fill voids around irregular-shaped connectors quickly and conveniently prior to taping. A four-page illustrated brochure including technical data is available on request from the manufacturer.

BUSINESS INSURANCE: Additional information on business insurance has been made available to small business concerns in a new Management Aid leaflet issued by the Small Defense Plants Administration (SDPA).

The leaflet, "Business Insurance — II", is the second in a series of four Management Aids on important types of business insurance and was prepared by the Research Department, Association of Casualty and Surety Companies, in cooperation with the SDPA. It is Number 15 in the series of Management Aid leaflets issued by SDPA's Management Service Division, and may be obtained free on request from SDPA field offices.

Under separate headings the leaflet discusses in detail workmen's compensation insurance and various types of accident and health insurance. It discusses the cost of such insurance, various types of benefits, and various types of coverage.

It also explains briefly different methods of financing the business insurance program and the desirability of discussing individual problems with the insurance agent or company representative. The completed series will provide basic information on all types of business insurance.

The leaflet may be obtained free on request to Small Defense Plants Administration, Old Washington Post Building, 1337 E Street N. W., Washington, D. C.

COMMUNICATION: A new 8-page illustrated booklet, published by *General Electric Co.*, discusses the use of 2-way radio for better coordination of men, materials and machines.

The booklet, titled "*Instant Communication*" is slanted to those businesses using materials handling and emergency service equipments, and others who have plant protection problems. It outlines the use of 2-way radio in numerous industries, and shows G-E equipment now available for a wide variety of applications.

The new publication also carries a list of 27 G-E offices throughout the U. S., from which advisory service is now available on communications problems.

Copies are available free on request to *Advertising Inquiry Section, General Electric Co., Electronics Park, Syracuse, N. Y.*

COPY LOCATOR: — An exclusive new Copy Locator to be used with their line of Procel Stencils is being offered free of charge by *Remington Rand Inc.*

The transparent Copy Locator facilitates the alignment or centering of material to be typed on a Procel Stencil. The guide lines on the Locator correspond exactly with those on the stencil, and by placing prepared copy in this folder (lining up the left edge with the fold), exact placement on a Procel Stencil can be determined by checking space numbers and guide lines.

The Copy Locator may be secured through any local Remington Rand office or by writing *Remington Rand Inc.*, 315 *Fourth Ave., New York* 10, *N. Y.* Ask for Copy Locator DS106.

DIESEL ENGINES: A new bulletin on the TS Diesel engine has been published recently by *Ingersoll-Rand.* This 12-page, 3-color catalog incorporates sectional wash drawings, installation views, and diagrams to show why the TS Diesel is called a smaller, lighter, but fully heavy-duty engine. It is a 7" x 8-½", 900 to 1000 rpm Diesel in the 200 to 400 hp. class.

Specifications, weights, performance curves and dimension tables are included in this bulletin, Form 10027, which is available from *Ingersoll-Rand Co.*, 11 *Broadway, New York* 4, *N. Y.*

IPCO FOG-FREE: — *Industrial Products Co.* has released a folder describing a new anti-fog liquid for use on glass and plastic surfaces where fogging and steaming presents a problem. According to the manufacturer, the product cleans and treats in one application and is practical for correction glasses, industrial goggles,

shields, masks, windows, mirrors, and inside of vehicle windshields.

Complete information may be obtained by writing to *Industrial Products Co.*, 3050 *N. Fourth St., Philadelphia* 33, *Pa.*

LUG-ALL: — The *Lug-All Co.*, 331 E. Lancaster Ave., Wynnewood, Pa., recently broadened its line of combination winch-hoists to include three most versatile models plus a unique and most useful set of inexpensive accessories.

Bulletin No. 116 describes the hoists and accessories and lists many "hoisting hint" suggestions. Copies available from the *Lug-All Co.*

METALS: The General Plate division of *Metals & Controls Corp.*, Attleboro, Mass. has issued an illustrated, 12-page catalog which describes the various composite metals, precious metals, electrical contacts and Truflex metals, manufactured by the company. In addition, it explains the various products which it fabricates.

The catalog covers some of the unusual composite metals which General Plate has recently developed and supplies information on the platinum-group metals and manganese age-hardening alloys. Of unusual interest are the two sections which cover thin gauge rolling and mirror finish rolling. Copies of the catalog are available by writing direct to the company.

MICROFILM: — A seven point service for placing records permanently on microfilm is outlined in a recently published booklet by the Business Services Department of *Remington Rand.*

This service provides an analysis of records to determine which ones should be filmed. These records are then prepared for microfilming. The actual filming is done by experienced operators, and is certified for authenticity. Films are indexed by the Microdex system for easy record finding. Rigid standards of developing and inspection of film assures highest quality. The final step indexes the Film-a-record cartons for filing efficiency.

The booklet, with complete information on complete microfilming service can be secured free of charge by writing for BSD-5 to *Remington Rand Inc.*, 315 *Fourth Ave., New York* 10, *N. Y.*

SELF-LOCKING FASTENER: — The United States Patent Office has issued a patent to *William Dzus* for a new type of quick-acting, self-locking fastener. The fastener is particularly suited for securing water and gas tight casings and is already in wide use on electronic, communications and airborne equipment. Screw drivers or special tools are not required for the operation of the fastener, as it has an enlarged head which can be readily grasped in the hand. A small wire form replaces the usual receptacle or spring with the result that very little mounting space is required in the supporting frame or casing. When the fastener is closed, the casing is held in tightly sealed position by a pair of sturdy springs carried in the head of the stud.

For literature describing the fastener, write *Dzus Fastener Co., Inc., Box* 185, *Babylon, N. Y.*

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Summary Of R E A Allocations

A monthly report of rural telephone loan allocations approved by the Rural Electrification Administration (REA).

New REA Allocations Total $2,035,300

DESPITE diminishing funds Rural Electrification Administration (REA) rural telephone loan allocations reported in Nov. and Dec. total $2,035,300. According to REA the allocations went to the following companies:

ALABAMA: *New Hope Telephone Cooperative, New Hope, Ala.* $60,000, the second loan to this borrower.

These loan funds will be used to cover the increase in construction costs since the first loan of $115,000 was approved in September, 1951.

About 440 rural subscribers in Madison, Marshall and Jackson Counties will receive modern telephone service as a result of the expansion possible under both REA loans. The completed system will operate 84 miles of line, and will be designed to serve all establishments in the operating area which desire telephones.

ILLINOIS: — The *Manhattan Telephone System,* a newly-formed Illinois co-op, was allocated $195,000. It will acquire the properties of the *Manhattan Telephone Co.,* serving 541 customers, and will rebuild most of the acquired plant, convert to dial, and serve an expected 70 additional subscribers.

MINNESOTA: — The *Pine Island (Minn.) Telephone Co.* $88,000 to expand and improve facilities of the *Oronoco (Minn.) Telephone Co.,* which it is acquiring, to serve 110 subscribers. Overall, the company expects to provide dial service to 955 subscribers through two exchanges. It is expected that some of the dial facilities will go into service about the first of March.

NEW MEXICO: — *Penasco Valley Telephone Cooperative,* Hope, N. Mex., received farm telephone loan allocation of $588,000. The new organization plans to serve 607 subscribers, over 585 miles of line. It is acquiring a small company at New Hope.

NORTH CAROLINA: — The *Randolph Telephone Co.,* Liberty, N. C., has been given a $350,000 allocation to finance conversion of its existing system, serving 335 subscribers, to dial, construction of 145 miles of new line, and expansion of the system

NORTH CAROLINA: *Tri-County Telephone Membership Corp., Belhaven, N. C.* $255,000 loan allocation, to provide modern telephone service in rural areas of Beaufort and Washington Counties.

The newly-formed cooperative proposes to construct 148 miles of line and install automatic dial facilities to serve 506 new rural subscribers. Dial central offices will be located at Sidney Cross Roads, Pinetown and Wenona. The area that will be covered by this new system has had no previous telephone service. The co-op has negotiated a contract with the Woodstock Electric Membership Corp. for management and operation services, and commercial office facilities. Service without toll charge will be available between the Sidney Cross Roads and Wenona exchange areas, and similar service is planned between those areas and their nearby trading centers.

The completed system will have basic plant facilities to meet the needs of all potential subscribers in the operating area.

OKLAHOMA: *Oklahoma Automatic Telephone Co., Kiowa, Okla.* $243,000, second loan to this borrower.

These loan funds will be used to cover the increase in construction costs since the first loan of $409,000 was approved in April 1951.

Approximately 1,350 rural families and establishments in Johnson, Pittsburg, Coal, Atoka and Murray Counties will receive modern telephone service as a result of the rehabilitation and extension possible under the two REA loans. Service without toll charge will be available between the Kiowa, Pittsburg, Wardville and Ashland exchange areas; between the Will Creek, Connorville and Reagan areas; and between Strington and Rodden. The completed system will operate a line of 530 miles, and will

have backbone plant facilities to meet the needs of all potential subscribers in the operating area.

TENNESSEE: — An additional $67,000 allocation will be used by the *Yorkville (Tenn.) Mutual Telephone Co.* to meet rising costs involved in construction covered by the January, 1951, first loan of $124,000.

TEXAS: *Five Area Telephone Cooperative, Muleshoe, Texas,* $98,300 loan to expand rural telephone service in Parmer, Castro, Bailey, Lamb, Cochran and Hockley Counties.

The newly-formed cooperative plans to acquire 42 miles of line serving 57 rural subscribers from the General Telephone Co. of the Southwest. The REA loan will enable the borrower to construct 1,059 miles of new line and install new automatic dial central offices at Cochran, Maple, Needmore, Enochs, Dodd, Lazbuddie and Warren. These facilities will bring modern telephone service to 1,322 subscribers now without telephones. The applicant is planning service without toll charge between each of the co-op's exchange areas and its nearby trading center.

TEXAS: *Peoples Telephone Co., Quitman.* REA rescinded $61,000 of the $400,000 loan approved in June, 1952, to this borrower. This rescission, based on a revised area survey, was made at the request of the borrower. As a nucleus for the new system, the applicant still proposes to acquire the Golden (Texas) Telephone Co., now furnishing magneto service to 125 subscribers over 75 miles of line, convert it to dial operation, and add four new dial exchanges.

The completed system will furnish modern telephone service to 909 subscribers, including 784 now without telephones, over 275 miles of line in Franklin and Wood Counties. The borrower is planning service without toll charge between several of its exchange areas and their nearby trading center.

TEXAS: *Santa Anna Telephone Co., Santa Anna.* $152,000, to finance the improvement and expansion of existing telephone service in rural areas of Coleman County.

The applicant, a partnership, soon to be reorganized as a corporation, now provides common battery service over 88 miles of line to 543 subscribers. With the REA loan, the borrow-

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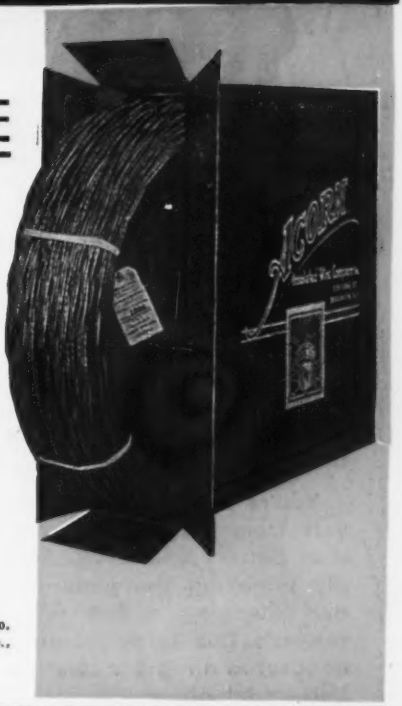

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er plans to convert the Santa Anna facilities to dial operation and install new automatic dial equipment at Shields, build 52 miles of new line and rebuild 53 miles of the existing line. As a result, 698 subscribers, including 155 now without telephones, will receive modern dial service. There will be service without toll charge between the two exchange areas of the system.

Completed, the system will consist of 140 miles of line, and will have basic plant facilities to serve all potential subscribers in the operating area.

Rural Co-op Activities

A monthly selection of activities announced by new and existing rural telephone co-operatives.

McGEHEE, ARK. — The first REA money actually advanced in Arkansas for a cooperative rural telephone system has been released to a group which plans to serve seven Southwest Arkansas counties. The funds, totalling $423,000, will be used by the *Southwestern Telephone Co-op., Inc.*, for a system to serve Miller, Hempstead, Nevada, Little River, Columbia, Clark and Pike counties.

WIGGINS, COLO. — The *Wiggins Telephone Assoc.* has announced the awarding of bids for the association's outside plant and two central offices.

For the outside plant, Stake Construction Co., Taunton, Minn., was the low bidder with $103,597.98. Stromberg-Carlson Co., Rochester, N. Y., was the low bidder for the central office equipment with a bid of $36,754.84.

The association will have 140 miles of wire and will provide service for about 330 subscribers in parts of Morgan, Adams and Weld counties.

BUFFALO, IND. — The *Pulaski-White Rural Telephone Co-operative, Inc.*, has filed articles of incorporation with the secretary of state of Indiana and the Public Service Commission.

The corporation proposes to buy the Star City-Pulaski exchange and the Citizens Telephone Co., of Buffalo, and operate from an office in Winamac.

Directors of the corporation are: Darl Good, Darwin Sayers, John Binkley, John Ploss and Firman Haselby, all of Star City; Milford Elliott and Cecil Westerhouse, of Monticello; Wayne Fitz, of Winamac, and Otho Price, of Buffalo.

ALBANY, MINN. — REA officals in Washington, D. C. have approved the *Albany Mutual Telephone Association* contract with Kellogg Switchboard & Supply Co. for central office equipment and also the contract with Commonwealth Construction Co., Pierz, Minn., for erection of the outside plant.

SEYMOURE, MO. — Directors and officers of the newly-organized *Webster-Rural Telephone Co-op* are: John L. Alcorn, president; Joe Stanard, secretary; Everett Mayfield, treasurer; D. C. Preston, Ed C. Philpott, Herman Bryant, J. E. Brixey, Orville Williams, Mosie Clark and Gerald Bessey. Raymond Carrick and Dave DeRuyter have been named to a special city board to work with the regular board of directors.

PHILLIPSBURG, MONT. — F. O. Billings, REA representative of Spokane, Wash., met with 45 local ranchers at the Joe Gillies ranch home to discuss the Telephone Loan Program and outline a program for supplying telephone service to all rural areas of the Upper Flint Creek valley.

Mrs. Joe Gillies was elected secretary-treasurer of the group. Mrs. Vernon Gormley, Mrs. Josie Shoblom, Walter Sanders, Rex Budel, Howard Lord and George Smith will contact prospective telephone users.

SCOBEY, MONT. — Officers and directors of the *Northeast Montana Telephone Association* have signed a contract for a loan of $1,987,000 from the Rural Electrification Administration.

The co-op will serve 2,600 rural subscribers in northern Valley and Sheridan, Roosevelt and Daniels counties in Montana, as well as part

of Divide county in N. D. Modern dial service will be provided.

Officials present at the sign-up meeting included Howard Woole of Washington, D. C., representing the loans division of the REA telephone branch, and Earl Sisk of Spokane, REA field engineer. President George Johnson of Reserve, Mont., presided. Mrs. William Hass of Outlook is secretary.

GARRISON, N. D. — The *Reservation Mutual Aid Telephone Corp.*, of Garrison, has been authorized by the North Dakota Public Service Commission to apply for a loan of $417,000 from the REA.

The corporation is negotiationg to purchase telephone facilities now owned by the *Sanish Farmers Telephone Co.*

STEELE, N. D. — Ten southern townships of Sheridan County will be served by the recently incorporated *BEK Telephone Mutual Aid Corp.*

The Ulteig Engineering Corp., Fargo, N. D., has been hired to do the preliminary engineering work necessary for securing the information required in obtaining a REA loan for financing the rural telephone program. Applications received to date have been turned over to the Ulteig Engineers for their use in the preliminary engineering work.

WILLISTON, N. D. — The Upper Missouri Valley will witness a boom next summer that's not connected with oil.

Three cooperatives will spend almost $4,000,000 in 1953 to purchase and build rural telephone facilities blanketing a vast 190 mile strip between Ray, N. D. and Saco, Mont.

Present plans call for the three co-ops to begin construction in the spring. They are the *Northwest Mutual Aid Telephone Co.*, in North Dakota; the *Northeast Montana Telephone Cooperative Association* in Montana and Divide county; and the *Valley Rural Telephone Cooperative* in Montana.

The Valley co-op recently signed a mortgage note with the REA for a $280,000 loan.

The Northeastern Monta co-op signed a note for a $1,987,000 loan last month, and the Central Engineering Corp., Williston, N. D., has com-

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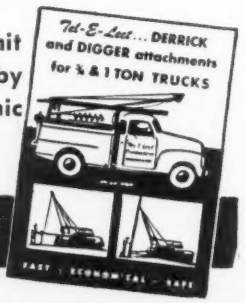
Write for Bulletin 325.

★ Answers the need for a two man construction crew

★ Sets poles up to 35'; takes augers 8" to 20" diameter

★ Packaged unit for installation by your local mechanic



TEL-E-LECT PRODUCTS, INC.

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pleted preliminary engineering of the co-op's system.

The *Northwest Mutual Aid Telephone Co.* of Williams County has signed a note for a $1,562,000 REA loan. It will serve an estimated 2,100 subscribers in Williams county and in adjoining sections of Divide, Burke, and Mountrail counties.

The three co-ops hope to let construction contracts this winter.

The largest of the three — the Northeastern Montana co-op — will serve an estimated 2,600 subscirbers in Divide, Roosevelt, Sheridan, Daniels, and Valley counties.

CONWAY, S. C. — Bayes Jordan of Carrollton, Ga., has been named manager of the *Horry Telephone Co-operative Inc.*

Ernest W. Johnston, director of the co-op, said the co-op has 600 members and it is expected 2,000 telephones will be connected. The principal exchange will be in Conway.

HOVEN, S. D. — A contract totaling more than $100,000 has been let by *Independent Telephone Inc.* for new central office equipment in Tolstoy, Hoven, Seneca, Omaka and Rosholt, according to Walter Wermerskirchen, president.

It was also indicated that new buildings to house the new dial telephone apparatus would be built early next spring. Construction of new pole lines in the Rosholt area is now nearing completion, and work is starting in this area.

The REA is lending $763,000 to the company for building a new dial system.

QUINN, S. D. — A half-million dollar telephone company that plans to build 3,000 miles of line in Pennington, Meade, Haakon and Jackson Counties has filed corporate papers with the secretary of state.

The *Golden West Telephone Cooperative* will headquarter at Quinn. Named as directors were Melvin Kjerstad, E. G. Geigle, Tony Krebs, Inglebert Fauske and Harvey S. Hildebrandt, all of Quinn; Alva Sims, Wall; Austin O'Dea, Cottonwood; Adolph Eisenbraun, Creighton; Thomas J. McNenny, Sturgis; Richard Kulesza, Haydraw, and Dale Keyser, Dowling.

The firm was capitalized at $500,000.

TABOR, S. D. — A new rural telephone company to be known as the *Co-op Telephone Co.* has been organized by a group of farmers south and southwest of Tabor. Members of the new company include Ross Howen, Fred Wampol, Peter Peska, Frank Tupa, Steve Povondra, Theo. Petrik, Frank Kaiser, Geo. Reining, Joe G. Ptak, Charles Ptak, Joe E. Stepanek, Robert Sestak, Albert Kreber, Robert Hakl, Robert Cwach, and Adolph Sedlacek.

BRADY, TEXAS — The *Central Texas Telephone Co-operative, Inc.*, is in actual operation, according to announcement by Ernest E. Wilson, secretary. He stated that all legal technicalities have been cleared for the project and $1,540,000 has been released for section "A."

Funds have been granted for operational expenses and also for acquisition of the 12 exchanges in the territory which will be a part of the co-operative.

Six independently owned exchanges have been purchased and are now being operated by the co-operative.

C. C. Sanders, manager, has assumed his duties in offices located in Goldthwaite.

KILGORE, TEXAS — Final papers for the $665,000 loan the *Etex Telephone Co-operative, Inc.*, will receive from the Rural Electrification Administration were signed recently by the co-op's board of directors.

Details concerning the telephone system and the service it will offer to subscribers in parts of Gregg, Upshur and Marion Counties also were outlined by J. L. Johns of Gilmer, co-ordinator for the co-op.

He emphasized the fact that money for construction of the system cannot be obtained from the REA until applications of 741 subscribers for service have been received. He stated the multi-party rate will be $4.25 per month, and that service connections will be limited to eight per circuit.

According to preliminary engineering plans, exchanges for the system will be located west of Kilgore and south of Gladewater in Gregg County, at Rosewood, Bettie and south of Gilmer in Upshur County and east of Jefferson in Marion County.

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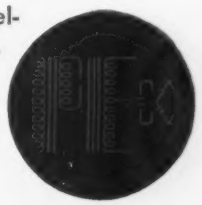

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Board of Experts at recent Area Clinic conducted by Wisconsin State Telephone Association (l. to r.): Dan Mullarkey, Wisconsin Telephone Co.; R. A. Shulz, General Telephone Co. of Wis.; H. G. Siepert, certified public accountant, Paul R. Parsons, Rhinelander, and Sec. Ray Riordan. — (Photo by Jim Ward, General Tel. Co. of Wisc.

Wisconsin State Telephone Association Holds "Area Clinic" In December

AN AREA clinic sponsored by the Wisconsin State Telephone Association and held at Rhinelander met with a very enthusiastic response on the part of industry representatives operating in Northeast and North Central Wisconsin December 3, 1952.

Fifty seven telephone folks gathered for the event, fifty of these representing 23 companies operating in the area surrounding Rhinelander. Of those located in the territory for which the clinic was designed, it represented a turnout of 92%, only two companies failing to send representatives.

It was the first event of its kind sponsored by the Association. The primary objective of the Clinic was the discussion of problems concerning smaller companies. The program was prepared accordingly.

Initial step in laying plans for the conference was actually taken by Paul R. Parsons, general manager of the Rhinelander Telephone Company. Parsons wrote the Association suggesting his company would play host role for a meeting of this kind. He also served as its chairman completing arrangements for the community hall as well as for the luncheon.

In arranging activities, special effort was extended to direct discussion toward problems of special interest to the companies that had been invited. Association Secretary, Ray J. Riordan completed a 900 mile tour of the area visiting with the various telephone managers and receiving their suggestions.

With this information at hand the program took form. The morning session concentrated upon treatment of rate base, financing, accounting and the matter of compensation for small company management. H. G. Siepert, Beloit, a certified public accountant, with a long record of experience in the telephone phase of accounting treated the subjects and replied to audience questions.

After lunch the crowd reassembled for an informal question and answer period. R. A. Schulz, transmission engineer of the General Telephone Company of Wisconsin lead a discussion on carrier equipment, costs, maintenance, experience and advan-

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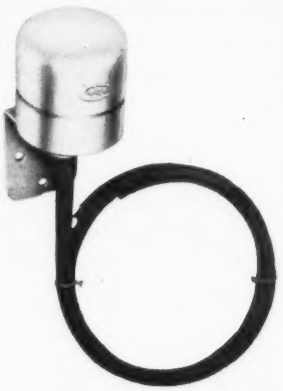
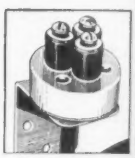
a heavy-duty arrester for fault currents...





Unit with alloy cover removed to show porcelain base and position of carbon electrodes.

In the event of contact between power and communication circuits, the Cook HI-CAP carries the fault current long enough to allow the power breakers to operate and de-energize the power circuit.

Certified tests show that the current carrying capacity of the HI-CAP is in excess of 750 DC Amps. for three seconds; 550 DC Amps. for four seconds, and 400 DC Amps. for five seconds. These protectors can be spaced along exposed lines to provide desirable lightning protection.

The Cook HI-CAP Power Cross Protector has three carbon electrodes with fusible elements which melt and further reduce the impedence of the fault current path when the fault current continues over a long period. They are easy to mount on poles or crossarms.

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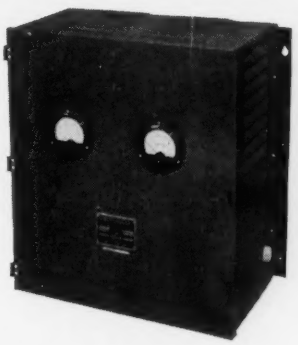

Maintains the close voltage limits required by telephone systems and reduces such common difficulties as incorrect ringing, line noises and lamp failures. The constant potential method of charging prevents battery gassing and water loss. A smaller maintenance crew can handle a greater number of installations.

A small storage battery floated across the terminals of a Raytheon RectiChargeR for emergency and peak period use is kept at constant cell voltage so that it never becomes overcharged or undercharged . . . thus prolonging the life of the battery.

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Crapo HTL-135 makes possible spans of 350 feet in heavy, 450 feet in medium, and 500 feet in light loading areas. Its practical economy should be considered for new extensions and where old lines are to be replaced.

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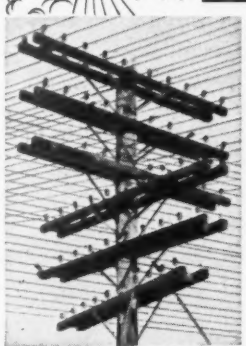

The finest pole and wire installation is useless if cross-arms fail. "Dependable" Cross-Arms are all that the name implies—made of sturdy, American woods, long seasoned, fashioned and finished to stand every weather condition from desert heat to mountain blizzards.

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tages. Wisconsin Telephone Company engineer Dan Mullarkey, treated long span construction and the problems his company as well as other Bell Associate companies had encountered with it and Paul R. Parsons, who was connected with the telephone section of REA for 18 months, replied to questions concerning the REA telephone program. Chris Hermsen, manager of the Oconto Rural Telephone Company explained his method of installing underground railroad crossings and Joe Cooper, Plant Superintendent of the Rhinelander Telephone Company gave a brief summary of simplified brush control methods used by his crews.

In view of the excellent reaction to the Clinic, Association President T. H. Moran has indicated that plans will proceed for similar events elsewhere in the state.

Paul R. Parsons, general mgr., Rhinelander (Wis.) Telephone Co., addresses Area Clinic conducted by the Wisconsin State Telephone Association. — (Photo by Jim Ward, General Tel. Co. of Wisc.)

Central Office Maintenance

(Continued from page 40)

special tool illustrated in *Figure* 206 *and* 216 is used to detect and straighten bent plugs.

The plugs are then attached to the rebutted cords, following the method illustrated in *Figure* 217. The tool shown has a special chuck that clamps the plug in position. The butt of the cord is inserted inside the base of the plug as far as it will go. The crank is then turned while the cord butt is firmly grasped in the hand to keep it from turning with the plug. This action screws the butt into the plug. Care should be taken to see that the cord tips do not seize inside the plug. Before the cord is inserted in the plug, the bare tinsel of the sleeve conductor is bent back over the braid serving, so that it will make firm contact with the inside wall of the plug. The end of the tinsel conductor is afterwards trimmed off with diagonal cutting pliers.

When the cord tips are in line with their respective terminals, the terminal screws are attached by means of a special screwdriver designed for attaching hollow type cord tip screws. The plug and cord is then removed from the cord attach-

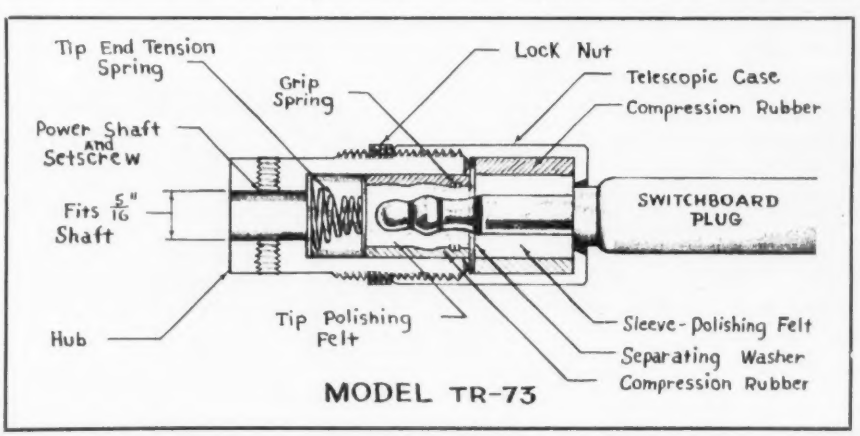

Fig. 211—Details of plug polishing chuck used on Delzell polisher.

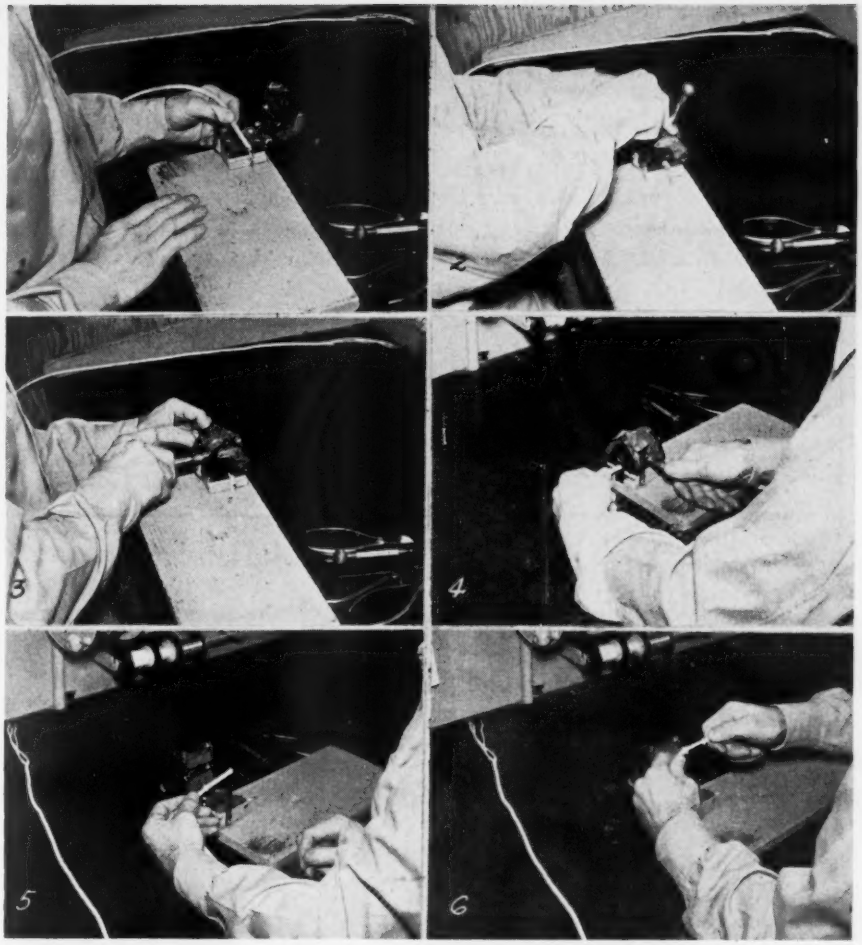

Fig. 212—Preliminary steps in preparing switchboard cord for rebutting. (1) Placing cord butt in cutting tool. (2) Closing hinged covers of tool. (3) Cutting off frayed end of cord. (4) Turning cord to cut braid covering. (5) Tool opened, showing severed braid. (6) Removing cut braid.

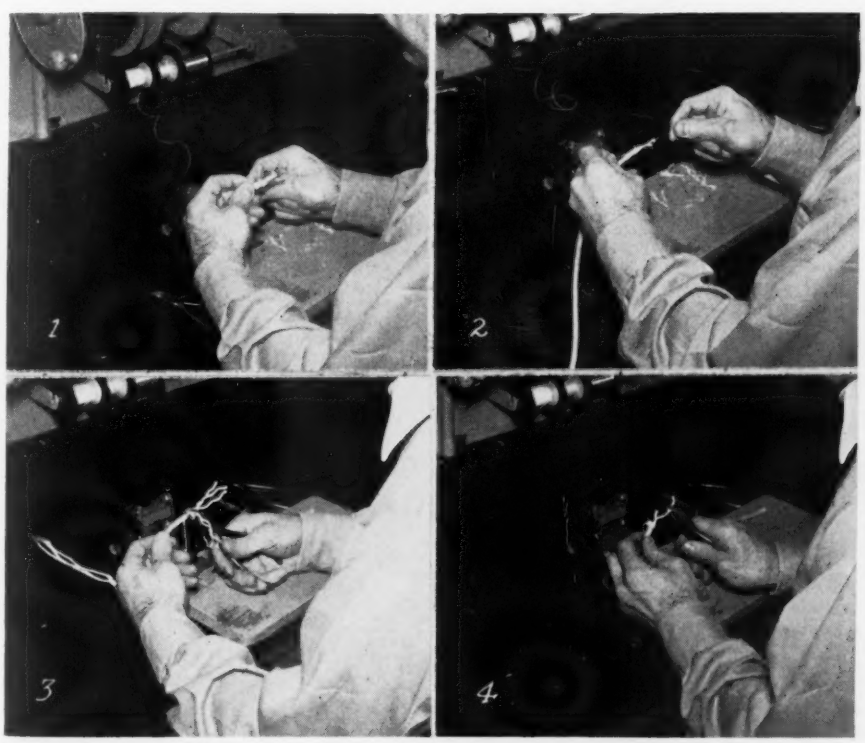

Fig. 213—Serving cord butt. (1) Wrapping serving thread around butt. (2) Tying serving thread. (3) Trimming edge of braid and filler threads beyond serving. (4) Cutting conductors to proper length for attaching cord tips.

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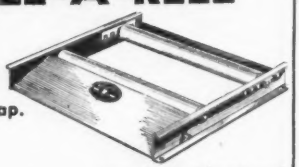

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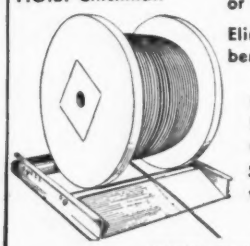

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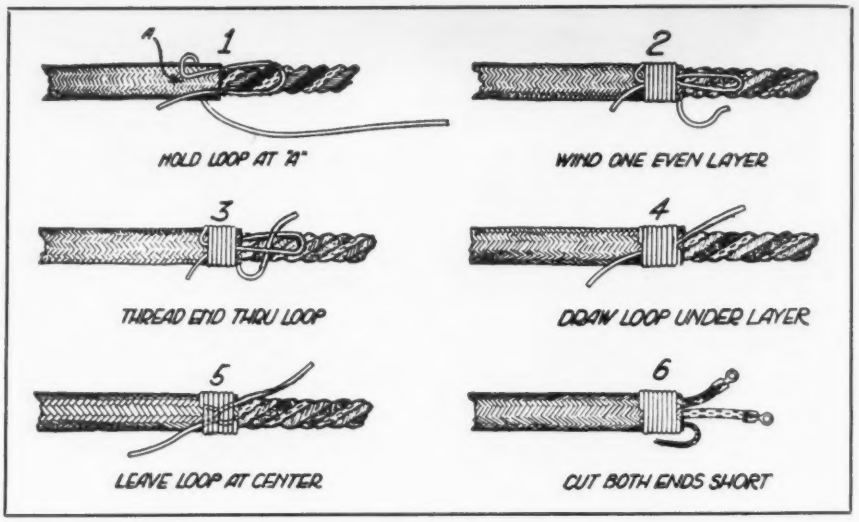

Figure 214

ing tool and the plug shell fastened in place over the plug.

The final operation, before testing the completed cords, is to equip them with rubber cushions which are rubber rings of the dimensions shown in *Figure* 218. The tool shown in this illustration is used to slip the cushion over the plug onto the cord just back of the plug base. The method is indicated in *Figure* 219.

To make sure that the cords will work satisfactorily after installation, the cords are tested by means of the cord test set illustrated in *Figure* 220. This cord test set checks the cords for continuity, short-circuits, crossed conductors, and noise. *Figure* 221 shows a wiring diagram of the test circuits in this instrument.

For the continuity, short-circuit, and crossed-conductor tests, three push buttons, each associated with a lamp, are employed. Continuity is indicated by all the lamps lighting when the cord conductors are connected to the clips and the plug is inserted into the proper jack. Failure of a lamp to light indicates an open conductor. Operating each push button in turn causes the lamp associated with the push button to go out. Failure of two lamps to go out on operating the buttons indicates that the conductors in this circuit are short circuited. Operating both buttons together will cause the two lamps to be extinguished at the same time. *—To be continued. Figures* 216-221 *will appear in the Feb. FORTNIGHTLY TELEPHONE ENGINEER.*

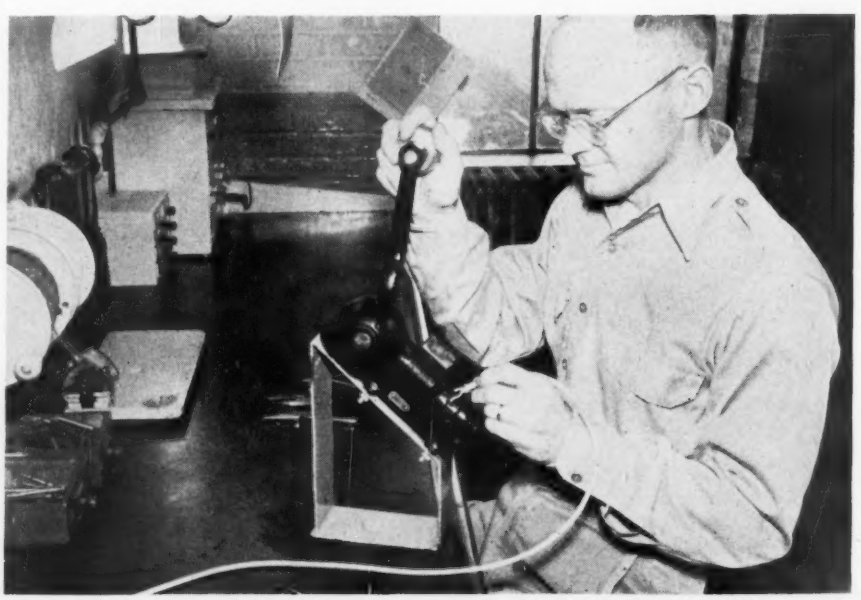

Fig. 215—Crimping solderless tips on cord conductors.

Ambassadors Without Portfolio

(Continued from page 43)

to everybody. And this concept, perhaps, lends us our greatest hope of channelling the follow-the-mob rule that dominates any group, including a company's employees. This concept means that workers know that when they satisfy a given set of conditions — talent for their jobs, resourcefulness, imagination, additional training, and seniority — they may expect to step up in their company. Workers must know for two reasons that the company will provide them with that assurance: (1) because they have seen other workers who satisfied those variables step up, and (2) even if the company practices this usual procedure of promotion on merit, the company in some way explains right at the outset of an employee's service that this is true. In short, they must know where they are going and what it takes to get there.

This idea must apply whether the individual aspires to be an exchange manager or to a vacancy for a lineman's helper. All this is another way of saying the old saw, "when the president retires, the firm hires a new floor sweeper." The only difference is that all workers must know it is true because the company assures them that it is — then practices it.

I believe then, that this philosophy carried to its conclusion — positive recognition tied in with company performance — guarantees that new employees will find security with the well-assimilated group and not with the malcontents.

"The Need For Listening"

MY THIRD prerequisite to making employees receptive is their basic need for self-expression. This means that the company should not talk all the time, it should listen, too, listen not only when workers have some complaint but listen for signposts that workers actually want answers to questions that management has never before considered questionable.

In a word, management and employees need to *listen*, to stop basing their current conclusions on conclusions they concluded long ago; to stop fighting to prove that what they do not know is so; and to stop bombarding the fellows in their own group with what they already know; and to start real inter-communication between the two groups, workers and management.

"Desire For Self Respect"

THE FOURTH need of all employees is their desire for self-respect. This is perhaps the least costly to the company and the most satisfying to the workers.

Management should not require anything from an employee that will detract from his self-respect: arbitrary orders given without an explanation, and "calling down" a worker in front of his fellow workers, tend to lessen self-respect. Management should realize that *asking* for a job to be done is always better than *ordering* it done.

When management fulfills its responsibility to the employee: making him a part of the team, giving him just recognition, and the opportunity for self-expression and for self-respect, it will leave the employee with but one course to follow — the earnest desire to be a better employee in a better company, the earnest desire to assume and improve *his* role *in his* company, the earnest desire to carry the message of *his* company to *his* community. And the community, the employee, and the company will individually and collectively make a tremendous step forward. — THE END.

Hubbard & Co. Elects New Officials

AT A MEETING of the board of directors of Hubbard & Co., Joseph V. Smith was elected chairman of the board and chairman of the executive committee and James H. Knowles was elected president, effective January 1, 1953.

Mr. Smith has been with Hubbard & Co. since 1915 and Mr. Knowles since 1947.

Hubbard & Co. operates plants at Chicago; Oakland, California; Alton, Ill.; Huntington, West Va., and Clinton, Ind. The parent plant and company headquarters are at Pittsburgh, Penn.

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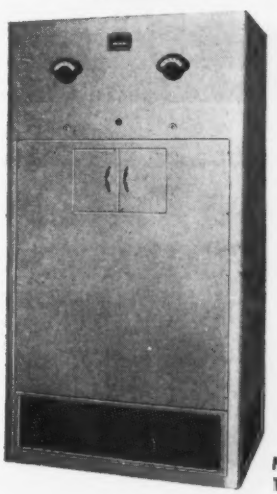

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If you're planning to replace or add to your charging facilities, don't overlook FLOTROL'S many advantages. Write for Bulletin 160 for complete information on single phase models, from 1/2 ampere to 24 amperes, Bulletin 161 describes three-phase models from 25 amperes to 200 amperes.

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Porcelain Products insulators for the telephone industry are made to guarantee top quality in insulation and top performance on your telephone installations. A complete and diversified line with each item especially engineered and produced to exacting specifications for telephone service.

Sold through your jobber. Write direct if he does not carry the P.P. line. Ask for copy of our Telephone Insulator Booklet.

PORCELAIN PRODUCTS, INC.
FINDLAY, OHIO

Small Company Talk

(Continued from page 46)

— people who called the number and couldn't get it because it was busy.

After a week's tally we took the figures to the owner and showed him what was happening. He was, as the word has it, flabbergasted. "You mean that many people were told last week that our line was busy?" We said that was exactly the point. "What can I do about it?" he asked. We suggested another line, a companion number, so that the operator would ring whichever line was not busy. He was very pleased with the suggestion, and took the additional line at once.

We find that many times business men who move into our town from cities order two lines at once. "One saved call a month in my business," one fellow told us, "will pay for that second line many times over." Another man told us, "Competition is getting keen in my line — if my line is busy, the customer is just as likely to call a competitor, so I think that second line is of real value to me."

Most larger companies offer a variation, usually cheaper, in the form of a line with one-way service — that is a line on which the subscriber can call out, but on which incoming calls cannot be answered, or vice versa. Such lines are used to meet specific needs on the part of the customer, and, since they involve less cost to the telephone company, are priced cheaper.

There are other variations, or combinations, also. A local druggist, for example, had a second line put in, for incoming calls only, made the number a non-listed number, and gave it only to the doctors so that they could be sure of getting him for a quick drug order without the possibility of his line being busy. Again, the examples are endless.

Neighbor, as much as I dislike the words "to be continued", it is obvious that our space is running short, and that the subject is far from being covered, so in a future article, or articles, we shall dig a little more into this idea. In the meantime, remember the additional listings, the extensions and the second lines. And of course, the approach is always that of what can we install for the customer that will make his service more valuable to him.

Think in terms of the *customer's* use of the service, the *customer's* needs, the value to the *customer*. For the goodwill gained by the telephone company is at least as valuable as the extra revenue. Put yourself in the customer's shoes first, and then hop back into your own.

Florida Convention Report

(Continued from page 59)

mercial and Plant, was conducted by Max Wettstein of the Florida Telephone Corp., Ocala, who introduced as the first speaker Frank C. Laver, equipment engineer of the Peninsular Telephone Co., whose subject was "Ambassadors Without Portfolios."

It was conceded by all who listened to Mr. Laver that it was the finest presentation of this subject they ever heard. Mr. Laver urged a program to develop better relations between the telephone industry and the communities it serves.

"Every employee," he said, "should be a good-will ambassador for his employer."

Four ways to create good employee relations were listed by Mr. Laver as appeal of the company as a human group, a positive recognition of merit, opportunity for self-expression among employees, and preservation of workers' self-respect.

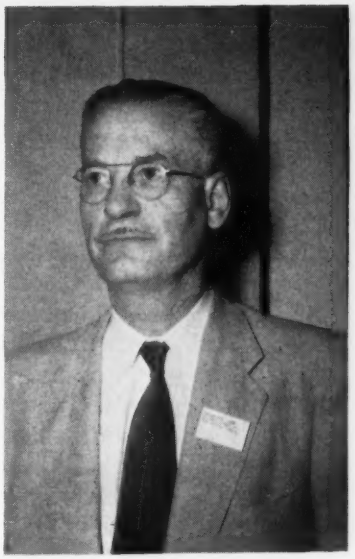
Mr. Wettstein then introduced the second speaker of the conference — John H. Ingmanson, vice president, Whitney Blake Co., New Haven, Conn., who spoke on "Synthetic Polymers in the Telephone Industry." Mr. Ingmanson discussed technical developments of substitutes for natural rubber in the industry.

"The polymers," he said, "are being developed as substitutes for nat-

ural rubber where their characteristics make them more valuable. A polymer is a chemical combination of a number of synthetic molecules to form a single large molecule in a substance with many of the characteristics of rubber."

A movie entitled "Brush Control" was presented through the courtesy of Kellog Switchboard & Supply Co.

The final speaker of the convention was Karl Lehmann, secretary of the Lake County Chamber of Commerce, Tavares, who paid tribute to work done in Florida by the telephone industry, citing investment of more than one quarter billion dollars in the state, plus a total of workers and their families which equals "the population of one of Florida's larger cities." "It is citizens like you," Mr. Lehmann said, "who have contributed to the growth of this state."



John H. Ingmanson, vice pres. of the Whitney Blake Co., New Haven, Conn., was a speaker at the recent Florida Convention.

Industry News Briefs

(Continued from page 13)

ing companies, were announced last month.

At the same time, Henry T. Inman, Bell of Pa. Central Area vice president and general manager, will succeed Mr. Longstreth in the Western Area, while Herbert V. Hurlbrink, vice president-personnel of the Wisconsin Telephone Co., will replace Mr. Inman at Harrisburg, Pa.

Commission Approves Hoosier Co-op Plan

IN AN NOT unexpected decision which will be taken to court, the Indiana Public Service Commission Dec. 4, by a 2-1 vote, approved the request of the Hoosier Telephone Cooperative for an operating certificate, partially clearing the way for it to receive a $6,600,000 loan allocation from the Rural Electrification Administration and acquire 13 telephone properties.

A spokesman for the intervenors who opposed the co-op proposal told TELECOMMUNICATIONS REPORTS flatly that an "appeal will be taken." He said that the groups fighting the plan have 60 days under Indiana law to file the appeal.

Press reports said that a basis for the decision of the two-member majority, both Democrats appointed by outgoing Governor Henry F. Schricker, was that the co-op is not actually a co-op, since it was organized under a 1935 non-profit corporation act. They said that the 1951 rural telephone act, under which the intervenors and dissenting Commissioner Wallace Weatherholt said the co-op should have been organized, would bar the proposal because it bans service to towns of more than 1500 and requires that all subscribers be co-op members.

Chairman Hugh W. Abbett and Commissioner Wendell Tennis, in a press statement, said that they "froze" the $290,000 to be provided by 10 Indiana rural electric co-ops as "equity" capital for the telephone organization. The fact that the co-op actually has no equity was another point of attack in the hearings.

On the third major point of opposition, the estimates that Hoosier's net income will fall $74,000 a year short of the amount needed to amortize the REA loan, the majority said "the feasibility of the furnishing of capital by the REA was not a question for the (commission), but solely a question for the REA Administrator."

REA sources said last month that the agency regards the Hoosier co-op as an interim arrangement lead-

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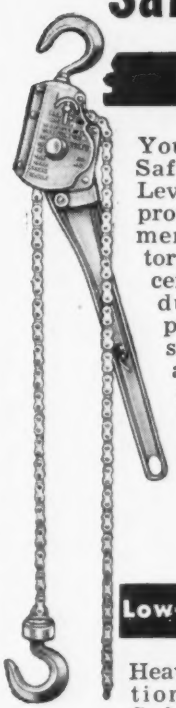

Extra Safety

You can depend on Safety-Pull Ratchet-Lever Hoists to fully protect men and equipment. They are factory-tested at 100 percent overload. With dual ratchet and pawl, load cannot slip or drop. Hooks are specially designed, alloy steel — will not break or straighten out.

Coffing Safety-Pull Ratchet Lever Hoists Ten models—capacities from 1,500 lb. to 15 tons.

Low-Cost Maintenance

Heavy-duty construction keeps Coffing Safety-Pulls on the job...out of the repair shop. Hoist frame and handle are certified malleable iron. Sprocket and ratchet are special alloy, heat treated for longer life. These and other construction extras keep Safety-Pulls working under hard, continual use.

For more information on Safety-Pulls and other products listed below, write Dept. U1SP

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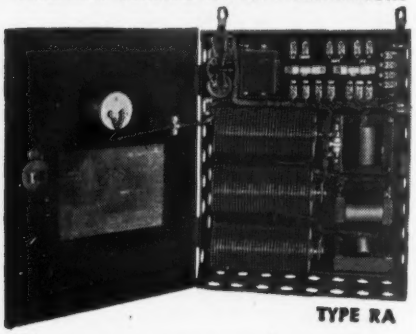
Hoist-Alls • Mighty-Midget Pullers
Spur-Gear Hoists • Differential Chain Hoists • Load Binders • I-Beam Trolleys
Quik-Lift Electric Hoists

SOLD BY DISTRIBUTORS EVERYWHERE

DEPENDABLE POWER
For PAX and PBX SYSTEMS
Electrox*
CONSTANT VOLTAGE BATTERY ELIMINATORS



TYPE RA

The most economical telephone power supply is an Electrox Battery Eliminator

Powered from your regular 110-volt lighting system.

Electrox Eliminators provide smooth, hum-free D. C. of required voltage — eliminating batteries.

Automatic operation. Output voltage remains practically constant, regardless of current drain. When desired, provision can be supplied to switch to emergency power source automatically.

Battery chargers and battery eliminators available in sizes and capacities to meet every power requirement.

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*T.M. Reg.

RECTIFIER DIVISION
SCHAUER
MANUFACTURING CORP

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ing to development of new groups to take over various parts of the properties. They said that it is anticipated that the large co-op will be broken up into about six parts, and declared also that some small groups are seeking permission to join the REA-financed organization. They added that the plans involve the return of the advances to the electric co-ops.

Dissenting Commissioner Weatherhold criticized the "inexperience" of the co-op's proposed management, and said that a private telephone company could and would do a better job.

In an editorial, the INDIANAPOLIS STAR, which has been opposing the transaction, declared that "This financial fantasy with federal funds was authorized by the two Democratic members of the PSC who, at the same time, denied a bid from Indiana Bell Telephone Co. to take over the firms at the going price and with private funds backed by the facilities and know-how of a successful private enterprise."

USITA Continuing Drive To Get Study Exchange Data

THE US Independent Telephone Association Toll Compensation Committee has launched an intensive drive to persuade companies which have not yet done so to submit costs of handling interchanged toll telephone traffic for use in the negotiations with the Bell System for revised toll compensation schedules. The campaign applies, of course, to the companies operating the 250 exchanges chosen as representative for study purposes.

At the Dec. 9-10 meeting in Chicago, it is understood, the USITA group had available complete returns from only 72 of the 250 exchanges selected. Dates for the next USITA-Bell System meeting on toll compensation are Feb. 18-19.

Jack Cluen Named To New Post

TELEPHONE officials in Warsaw, Ind., have announced the promotion of Jack C. Cluen, to the position of general traffic superintendent for United Telephone Co., Inc., Ohio Telephone Service Co., and Jasper Telephone Corp. The general offices for the three companies are located in Warsaw.

As head of the traffic department for the three companies, Mr. Cluen assumes the post held formerly by George A. Steele, who will now devote his time exclusively to his office of vice president and secretary-treasurer of the three telephone corporations.

Jack Cluen

In his new capacity, Mr. Cluen will have supervision over nearly 800 traffic employees in 95 telephone exchanges throughout Indiana and Ohio. Among his other duties, he will prepare the companies' annual traffic budgets, compute telephone traffic requirements for switchboards and toll line facilities, and negotiate contracts with connecting telephone companies for the settlement of interconnecting toll business.

Mr. Cluen began his telephone career as an accountant for United Telephone Co. in June, 1937 and he continued in this capacity until his enlistment in the U. S. Army Air Corps in January, 1941.

He was separated from service with the rank of Captain early in 1946 and resumed his work for the company as assistant traffic superintendent and assistant treasurer for United Telephone Co., Inc. and Ohio Telephone Service Co.

In addition to handling the responsibilities of his telephone work, Mr. Cluen is active in civic affairs. He is president of the Warsaw (Ind.) Lions Club Commanding Officer of the local Volunteer Air Reserve Training Unit, and is an active member of the Telephone Pioneers Association, American Legion and the Masonic Lodge.

The Egg and WE

Recent Mid-Western floods reminded us at Western Electric of something that happened nearly 40 years ago; the great spring thaw of 1913 . . . and those eggs.

Marietta, Ohio and all approaches to it were deep under flood waters from the Ohio River. So was the terminal room of the local telephone building.

Western Electric chartered a stern wheel steamboat and a barge to float into Marietta a 65-man crew of installers, along with their tools, equipment, bedding . . . and *food*. That's how the eggs got aboard.

Intending to order 144 dozen eggs, the general foreman actually ordered 144 cases . . . or eggs-actly 66½ dozen eggs per man! The old stern wheeler practically cackled as it arrived in Marietta.

On the job, the crew removed damaged equipment from the telephone building as fast as the waters receded . . . but they couldn't make a dent in the eggs. To make matters worse the men polished off the ham and coffee within two days. For the rest of the job only canned beans remained . . . and EGGS. There were eggs for breakfast, lunch and dinner . . . fried eggs, boiled eggs, scrambled eggs.

But long before the eggs had disappeared this crew had finished its assignment. Working twelve hour shifts, in four days the men had 1200 lines, 60 trunks, 4 toll and 6 local positions and the power plant back in service.

MORAL: A long time ago, Western Electric acquired the habit of getting things done fast . . . come eggs or high water . . . and we're still at it on our two main jobs: one, helping to keep the Bell telephone companies going and growing and, two, together with our team-mate, Bell Telephone Laboratories, devising and producing what the Armed Forces need from us for defense.

Western Electric

A UNIT OF THE BELL SYSTEM

Florida Commission Grants Peninsular 6.81% Rate

ADDING a factor to the rate of return to allow for the depressing effect of high-cost plant construction, the Florida Railroad & Public Utilities Commission last month granted the Peninsular Telephone Co., leading Independent with headquarters at Tampa, Fla., authority to increase its rates by a gross amount of $497,000 a year. The amount approved for the Peninsular company, which had three previous applications for rate increases turned down, is about one-third of the amount requested.

Peninsular's proposed rate schedules to produce the 8% boost in gross revenues were considered by the commission at a hearing Thursday, Dec. 18.

The commission held, basically, that the company is entitled to a return of 6½% on its net average investment and on the rate base approved. It declared that an Independent telephone company may be entitled to a somewhat higher rate of return than Bell System companies because of the possible hesitancy of the public to invest in an Independent company, with which it may not be familiar, and the greater impact of local conditions on the operations of an Independent.

Going a step further, the commission pointed out that, based on the test year, Peninsular had an increase of 4.71% in the investment per station required. Declaring that the company must be allowed to earn a higher return because of the increasing construction costs, or the 6½% figure would be reduced to confiscation, the commission increased the allowed rate of return by the 4.71% factor to permit earnings of 6.81%.

Although the commission knocked out part of Peninsular's claimed amounts for cash working capital and materials and supplies in fixing the rate base, it did authorize part of the amounts requested. On the subjects of materials and supplies, it said that Independents do not have the benefits of an organization such as Western Electric, and thus have to maintain, proportionately, more elaborate warehouse setups and stockpile more supplies. As a result, it permitted a materials and supplies allowance of 2% of the plant investment.

Peninsular President Carl D. Brorein pointed out that the rate boost is the first for his company since the 1920's, even though other companies in the state have had one or more rate increases.

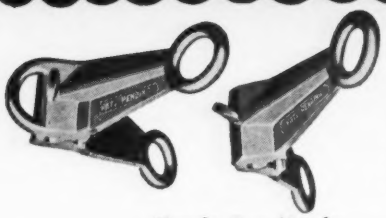
"Compared to an increase in living costs of some 90% since 1939, this increase in local service rates of about 8% is very low," Mr. Brorein commented. He added, "However, with the great amount of additional capital required now, we will see if it gives us relief for the time being, at least."

Peninsular serves five counties in Florida, and is one of the largest single-owned Independents in the nation.

Rules Wire-Tap Evidence Admissible In State Courts

A CLEARCUT ruling that evidence obtained by wire-tapping is admissible as evidence in state courts was handed down last month by the United States Supreme Court. The nation's

How to Solve Your Cable Spinning Problems the Easy Way



Platform Clamps
Support splicer's platform from aerial cable—spun or otherwise. Won't slide on grade or damage cable. Bronze alloy.

Handline Block,
specially designed for spun cable, may be used on cable with any other kind of support. Clamps on strand. Won't slip on grade or damage cable. No wrench is needed. Bronze alloy.

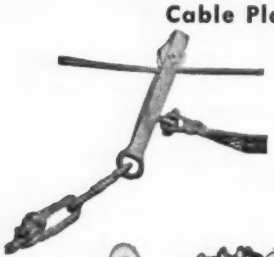
Single Eye Hooks
...for four supporting adjustable ropes of a splicer's platform. Cadmium-plated steel.

Double Eye Hooks
make splicer's platform readily adjustable ...by threading supporting ropes through double eye. Cadmium-plated steel.

Lashing Wire Clamp
designed by Neale, holds spinning wire with positive action clamp when terminating at pole. Also keeps slack from running back in cable repairs. Bronze alloy with cadmium plated screw.

Soap Can & Brush
keeps pressure testing soap or paint in excellent condition. Cast aluminum for light weight. Tight-fitting cover serves as handle for brush. Container equipped with spring belt clip.

Cable Placing Ring Guide Roller
offers means of pulling cable in and takes down pull on tow line to truck. Cadmium plated steel with bronze bushing.



Cable Placing Shoe
is used ahead of spinner to raise cable from reel to strand in placing and spinning cable. Also used stationary at pole when placing with rings.

Steel Placing Rings
...for light cable. Slip rings onto cable at pole and attach to pulling line. Rings distribute themselves every five feet along span. Sets of 20, including 110 feet of rope attached.

LITTLE GIANT Slack Pullers

Here's a combination of great strength and very simple operation...to make difficult operations easy. Furnished with either slip handle (left) or ratchet (right). Moving parts cadmium plated.

Bronze Cable Placing Ring.
Roller design eliminates sheath damage of all sizes of cable. Cast bronze body and bronze rollers.

CABLE SPINNING MANUAL
gives complete details on operation of Neale Cable Spinner with easy-to-follow service and maintenance instructions.

THE WORLD IS SPINNING—100!
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highest court, in an 8-1 decision, held that while wire-tap evidence is inadmissible in federal courts, because of provisions in the Communications Act of 1934, there should be no federal contravention of the police power of the states.

The appeal, in a Texas case, was based on the Communications Act's ban on obtaining and divulging information through wire-tapping. Various courts have ruled that wire-tap evidence is not admissible in federal courts, but there have been several findings that it is proper in state tribunals.

As a result of the US Supreme Court decision, it was pointed out in newspaper editorials, federal law enforcement agencies are now under a handicap, as compared to their colleagues in the states. The *Washington Star* urged that Congress amend the Communications Act to give the same authority to federal law enforcement agencies.

Rochester Tel. Advances Clarence Marble

IT HAS BEEN announced by G. W. Miller, chief engineer of the Rochester, (N. Y.) Telephone Corp., that Clarence Marble was promoted to the position of plant engineer on January 1, succeeding John G. Carritt, who is retiring.

Marble, a native of Chicago, Illinois, has been with the company for over 32 years, his first job being a draftsman in the engineering department. After a series of promotions, he was appointed assistant plant engineer in July, 1950.

Marble is a veteran of the two World Wars. He was on active duty in the Navy during World War I and, in World War II, served in the Army. He was also a civilian engineer in the Signal Corps at Governor's Island and at the University of Kentucky.

The new plant engineer attended Rochester Shop and West High schools. He has been granted three patents in the telephone field.

Lee Telephone Company Installs 15,000th Telephone

ON DECEMBER 17, 1952 a milestone in the progress of the Lee Telephone Co. was passed when the Company's 15,000th telephone was installed in the home of Mr. and Mrs. Harold R. Whitt, Rich Acres, RFD #4, Martinsville, Va. The Rich Acres area, a new development, is served out of the Lee company's Martinville exchange.

The founders of the Lee Telephone Co., B. L. Fisher, left, and his brother, Luther M. Fisher, right, are shown above in the front of the home of Mr. and Mrs. Harold R. Whitt, Rich Acres, RFD 4, Martinsville, Va., where the 15,000th telephone in the Lee company's system was installed recently. Rich Acres area is a new residential development near Martinsdale. B. L. Fisher who has had more than 48 years of experience in the telephone industry is president of the company and his brother is vice-president and a member of the board of directors.

The passing of the 15,000 mark is significant in that it illustrates how rapidly the Lee Telephone Company has grown and expanded its facilities in order to make its service available to the people in the areas in which it operates. At the close of World War II in 1945 the company had slightly less than 5,000 telephones in service. The company now has 13 dial telephone exchanges of which nine are in Virgina and four are in North Carolina. In Virginia its exchanges are located in Martinsville, Bachelor Hall, Bassett, Boones Mill, Collinsville, Ferrum, Fieldale, Rock Mount and Stuart, and in North Carolina in Madison-Mayodan, Stoneville, Walkertown and Walnut Cove.

The expansion of the facilities of the Lee Telephone Company since World War II has been made more difficult by the long delays in the delivery of the necessary telephone equipment and materials from suppliers. These delays were caused by the unprecedented demand for telephone equipment and materials by all telephone companies in order to meet their service requirements. The Korean conflict and the resulting government restrictions on the use of the materials needed in the telephone industry have curtailed the

The clean way to safeguard poles, crossarms and other wood construction is the PENTA way. This chemical formula is always the same—deep-penetrating, powerful, long-lasting. PENTA-treated poles last years longer, cost less to maintain . . . and they're *clean*. Write today for names of companies near you supplying PENTA-treated wood products.

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A Full 5 Inches of Body Movement
With Ease and Safety

BASHLIN'S
New Shifting Tool Dee Safety Belt

Next to Safety in the experienced lineman's book, Accessibility of Tools is of first importance in selecting a Safety Belt. This new Bashlin Safety Belt is designed with sliding tool loops . . . keeps tools within easy reach. And the built-in extra safety factor saves the Safety Strap from wear. It's Safe . . . Practical . . . Comfortable . . . and you *know* it's right. It's Bashlin.

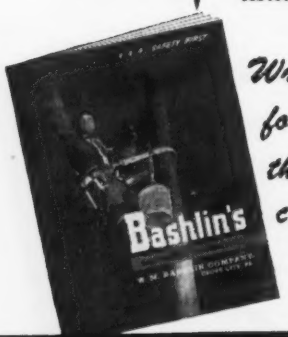
Another First

One piece aluminum sleeve adjusts from 15" to 18" in multiples of ¼". Locked in place with standard steel screws.

Comfort on the job, lightness and safety combine in Bashlin's adjustable Climber with removable gaff . . . Forged of aluminum alloy, the Bashlin Climber is lighter than conventional climbers and the *Same Strength* as *Equivalent Steel*. It's form fitting and has all the original Bashlin features.

No. BD 14

Removable gaff forged from alloy steel, features triple locking device with standard self-locking tested steel screws



Write for this catalog

W.M. BASHLIN COMPANY
GROVE CITY 1, PA.

expansion programs of telephone companies.

The Lee Telephone Company now employs 141 people and main offices of the company are located in Martinsville. Many years of service in the telephone industry have been accumulated by employees of the company. There are two employees who have each had more than 40 years of service in the telephone field, four who have had more than 30 years experience, five with over 25 years in the industry, three who have had 20 years or more, five with over 15 years, 10 who have served more than 10 years, and 44 employees who have been in the telephone field more than five years. One employee, retired in June, 1952 after more than 46 years of telephone service in Martinsville. B. L. Fisher, president of the Lee Telephone Company, has had more than 48 years of experience in the telephone field, since going into the industry in 1904, along with his brother, Luther M. Fisher, who is currently serving as vice-president and is a member of the board of directors of the Company.

Vision Of Founder Realized As Ocala, Florida, Goes Dial

OTTO WETTSTEIN, JR., has made a career of building up telephone exchanges during his 53 years in the Independent telephone industry. Latest addition to the list of modernization projects completed is the recent conversion of the Ocala exchange to dial.

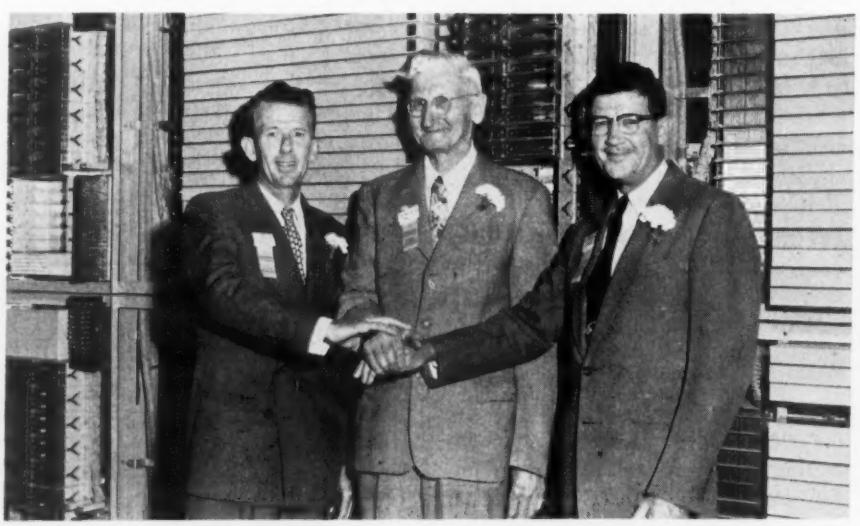
Ocala is the geographic center of the 28-exchange operating area of the Florida Telephone Corp., serving over 22,000 subscribers in central Florida. The general administrative offices of the corporation are located at Ocala.

The new exchange building is a distinct asset to the architectural progress of the fast-growing city. Business, plant offices, and the Stromberg-Carlson XY dial equipment are located on the ground floor; a new 14-position toll board has been installed on the second floor. The long distance equipment is designed to enter into national operator toll dialing, according to Charles Fawcett, equipment engineer.

Mr. Wettstein has witnessed a growth beyond all expectation since the Dade City exchange became in 1915, the nucleus of the present corporation. The Ocala exchange had an estimated 100 stations in 1900, 1,834 in 1940, 4,475 in 1950 and 5,280 stations in service in October 1952. A continuing rate of increase is expected and has been adequately planned for.

Mr. Wettstein's two sons have now assumed most of the burdens of management. Otto Wettstein III, as president, is manager of operations in charge of all services rendered and property maintenance. Max E. Wettstein, executive vice-president, serves also as secretary, treasurer and controller. The successful financing of the present modernization program is a tribute to his stewardship.

Even now, as Ocala is enjoying the benefits of modern dial service, a program is being prepared for fur-



Otto Wettstein, Jr., founder and board chairman of the Florida Telephone Corp., flanked by his two sons, Max E. Wettstein, executive vice-president (left) and Otto Wettstein III, president (right) shown during the recent cutover of their Ocala, Fla., exchange to dial.

ther improvements in surrounding areas served by the Florida Telephone Corp.

Michigan Bell Introduces Address Telephone Directory

MICHIGAN BELL Telephone Co. is making available a new type of customer service, an address telephone directory, which is being offered on a subscription basis.

Known as the "Blue Book," the three-inch-thick directory contains 1450 pages which list all of Detroit's streets alphabetically, the house number on each street, followed by the name of the resident there and, if he has one, his telephone number. The book also offers the same listings for several of Detroit's adjacent suburbs.

Henry C. Kulling, Michigan Bell's General Directory Manager, said that company was prompted to publish such a directory by repeated requests from business customers.

Ben Hall Heads South Dakota Assoc.

OFFICERS were elected by the South Dakota Telephone Association at its 45th annual convention at the Cataract Hotel, Sioux Falls, S. D.

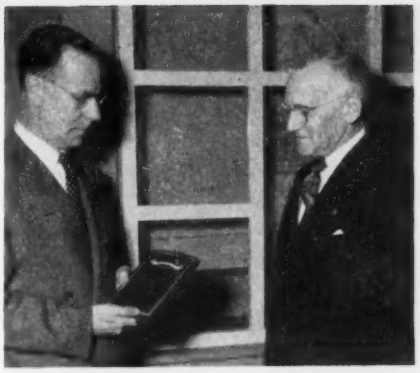
Ben Hall, Avon, was chosen president to succeed J. W. Tobin, Plankington. Hall this year served as vice president. Paul Hall, Emery, and Ken Connors, Jefferson, were elected first and second vice presidents, respectively. W. A. Pirner, Delmont, was reelected secretary-treasurer.

Montana Co-ops Form State Association

REPRESENTATIVES of three rural telephone co-operatives covering most of eastern Montana and a part of western North Dakota have complete organization of the Eastern Montana Association of Rural Telephone Co-operatives. Purpose is to coordinate activities, promote the rural telephone program and to further rural service.

Officers elected at a meeting held in Wolf Point, Mont., are Francis Tarum of Richland (Northeast Montana Rural Co-op), president; Albert Hoffman of Presserville-Vida (Mid-River Co-op), vice-president, and John Amestoy of Hinsdale (Valley Co-op), secretary.

During organization, Dana O. Schrupp, Valley county extension agent, was temporary secretary, and



H. E. Clapham of Automatic Electric Company and publicity director for the Gary Group with the Talbot G. Martin Award presented by L. L. Ruggles, chief sales engineer (right), at the December Strowger Automatic Club meeting at Fred Harvey's, Union Station.

H. R. Wolle of Greeley, Colo., REA fieldman, temporary chairman.

The new association will hold quarterly meetings, beginning the third Thursday in January, 1953, with Wolf Point as the regular meeting place.

One subject at quarterly meetings will be discussion of co-operation in locating boundaries of the co-ops. Engineers of each co-op will meet with the board to discuss "fringe" areas.

Progress reports were made by the groups.

The Northeast co-op includes Roosevelt, Daniels, Sheridan and Valley counties in Montana and Divide county in North Dakota. It has signed its contract for an REA loan, and its area coverage map has been approved. It has acquired five farmer lines and may acquire another.

Mid-River includes Richland, McCone, Garfield, Prairie and Dawson counties in Montana, and possibly McKenzie and Golden Valley counties of North Dakota.

Valley co-op includes the southern portion of Valley county and the western fringe of Phillips county adjoining it. This co-op is now awaiting action from Washington on its subscriber list and area coverage maps.

SDPA Issues Data On Expansion Problems

SOME OF THE pitfalls that face the management of a small firm as it expands its operations are explained in a new leaflet issued by the Small Defense Plants Administration (SDPA).

The 4-page leaflet, "Changes in Organization Responsibilities as the Plant Grows," is Number 18 in the

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series: Management Aids for Small Business. It points out that, while the "one-man show" type of operation may be successful in some small ventures with few employees and few production problems, in the long run the most stable and successful plant growth is that which follows a sound, predetermined plan.

Highlights to guide the small business man in administering the health- growth of his management organization are outlined in the leaflet as follows: Planning Intermediate stages of Growth; Developing Staff Functions; and Following a Logical Sequence. The leaflet points out the importance of making sure that all management people know what they are responsible for, to whom they are responsible, and how line and staff functions are related. Copies of the leaflet may be obtained free on request from Small Defense Plants Administration, Old Washington Post Building, 1337 E. Street N. W., Washington, D. C.

Other leaflets in the Management Aid Series, also available free, are: How Small Plants Can Sell to the Federal Government; Adequate Production Control; Reducing Accident Costs in Small Industrial Plants; Business Insurance, I and II; Reducing Accident Cost Through Safe Working Conditions; Is Your Labor Turnover Cost Too High?; Reducing Accident Costs Through Use of Safety Committees; Incentive Techniques for Use in Small Business; How the Small Plant Can Analyze Old and New Markets; Saving Manpower in Industry; Minimizing the Cost of Breaking in New Personnel; Reducing Accident Costs Through Reports and Records; Small Plant Health and Medical Programs; Subcontracting for Small Plants; Methods Engineering for the Small Plant; How the Walsh-Healey Public Contracts Act Affects Government Supply Contractors.

Motorola Announces New Subsidiary

PAUL V. GALVIN, President of Motorola Inc., has announced the organization of a wholly owned subsidiary corporation, Motorola Communications & Electronics, Inc.

The new company will distribute products manufactured by the Communications & Electronics Division of the parent corporation. These products include complete mobile two-way radio systems, multi-channel microwave relay systems, power line carrier, supervisory and industrial control equipment.

Thomas P. Leddy, former vice president and general manager, Federal Electric Manufacturing Co., Montreal, Canada, has been elected assistant vice president of Kellogg Switchboard & Supply Co., 6650 S. Cicero ave., Chicago, an International Telephone & Telepraph Corp. associate. Assigned to the staff of Vice President and Sales Manager F. M. Parsons, Leddy will coordinate activities of the Kellogg company's Government Sales Department, President James H. Kellogg announced.

Mr. Galvin stated that this separate company will provide the flexibility and latitude necessary to serve more effectively Motorola users of complex communications systems.

No change is contemplated in the field sales personnel for these communication products as a result of the organization of the new company, and the operations of the other divisions of Motorola are not affected.

Stromberg-Carlson Advances F. E. Blake

FRANCIS E. BLAKE, who joined the Stromberg-Carlson Co. May 12, 1952, has been appointed assistant manager of the company's patent department. His responsibilities will be mainly to the telephone division of the company.

Mr. Blake came to Stromberg-Carlson from the Chicago law firm of Foorman Mueller, and previous to that was patent attorney for the Atomic Energy Commission, in Washington D. C.

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In the Planté, *all* of each positive plate is pure lead, containing *no* antimonial impurities. Thus, Gould has eliminated the primary cause of self-discharge, capacity losses and shortened battery life. Planté batteries float at constant voltage and maintain rated capacity all their life. Because they almost never need service, maintenance is negligible. If you would cut battery costs to a minimum, choose Planté.

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Literally "by request"—this new operator's chair retains all the posture advantages for which Sturgis is famed and adds the cool, clean comfort of a *cane* seat. The posture-curved, well-cushioned back rest is covered in genuine leather.

The exclusive Sturgis "Follow-Flex" feature automatically adjusts to the operator's every movement, supports her restfully all the time, discourages fatigue, keeps her at top efficiency.

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PERSONALIZED SERVICE

Washington Bureau Reports

(Continued from page 35)

for telephone companies to redouble their efforts to gain more of a fair shake in Washington.

For example, it is reported that the air, bus, and train passenger fields are confident of gaining repeal of the 15% excise on the transportation of persons. More power to them. But the total number of dollars of tax reductions will be strictly limited, and telephone men (who could make quite a case that telephone service is at least as essential as air, bus, and train travel, and that telephone excises have at least as great an impact on the family budget as travel levies) will have to hustle to gain at least equal treatment.

The situation, for business, is akin to the story of the boy who was constantly absorbing bad beatings from the neighborhood bully in street fights. Ultimately, a local philanthropist started a boys' club in the neighborhood and equipped it with boxing equipment.

The boy immediately arranged a match with the bully. He was given a ferocious beating, and finally knocked out.

When he came to, he immediately called for a rematch. A solicitous friend urged him to forget it, "before you get killed."

"Maybe so," replied the boy. "But this is the first time we ever had a referee to make that guy put on boxing gloves over those brass knuckles."

Automatic Appoints Ryon Sales Promotion Manager

ANNOUNCEMENT has been made by Automatic Electric of the appointment of H. C. Ryon as sales promotion manager, effective January 1, 1953. Mr. Ryon joined Automatic Electric Sales Corporation a year ago as staff engineer, and has since been acting in an advisory capacity on technical and commercial matters to the Company's customers in the Independent telephone field.

In his new position as sales promotion manager, Mr. Ryon will re-

main on the staff of Automatic Electric Sales Corporation, but will be responsible for coordinating the sales promotional efforts of the entire Automatic Electric organization. In this work, he will devote a considerable amount of time to the study of requirements of customers in various fields, so as to maintain up-to-date and first-hand knowledge of their needs. He will also maintain close contact with members of the Company's technical organization and with staff sales engineers to insure that the selection and development of new products and improvements in existing products will conform with such new and changing requirements as may develop.

Mr. Ryon will also have staff supervision over the promotional activities of product managers in the sales organization, and will see that their work is effectively coordinated with that of others in the organization who are concerned in any way with sales activities or service to customers.

Mr. Ryon came to Automatic Electric in January, 1952, from The North Electric Manufacturing Company, Galion, Ohio, where he was sales manager for the preceding ten years. He first joined the North organization in 1931, after four years at Northwestern University, working first in the laboratory and then in the engineering department. After spending the four years from 1934 to 1938 in the service of the Corps of Engineers, U. S. Army, he entered the North sales organization, becoming sales manager in 1942.

During his long service with the North company, and more recently with Automatic Electric, Mr. Ryon gained a broad knowledge of the requirements of customers for communication equipment and allied products, and a background of experience that is expected to prove of great value in developing a sound and effective sales promotion program for the marketing of Automatic Electric's constantly expanding range of products.

G. J. Doss Heads Up New Switchboard & Control Div.

GORDON J. BERRY, president of The Electric Products Co., announces the establishment of the E. P. Switchboard & Control Division. While the

(Please turn to page 89)

"Some people frame their first dollar bill. He had to get sentimental about the first KOPPERS POLE his company bought!"

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G. J. Doss

company has for years designed and manufactured industrial-type switchboards and control for use with their own rotating equipment, little thought was given until recently to expanding this operation beyond the immediate needs of the company.

Now, all switchboard and control functions, engineering and manufacturing, are being consolidated as a distinct unit. This move is another step in the expansion progress program initiated by the Company several years ago.

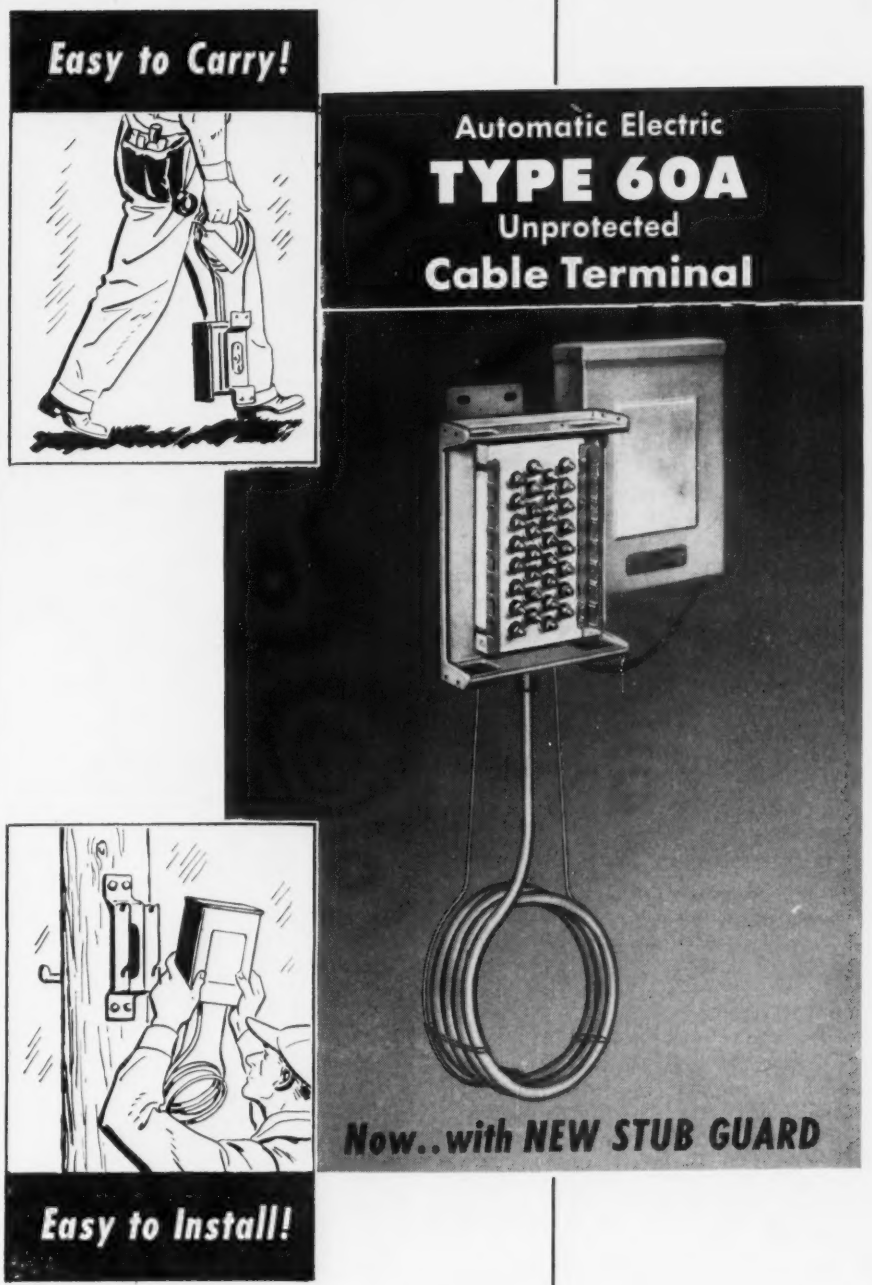
G. J. Doss has been named general manager of this new division. He joined The Electric Products Co. in 1946 as manager of the Cleveland district office and in 1951, was advanced to assistant sales manager. He brings to his new position a broad experience in electrical sales and engineering.

Copperweld Assigns New Territories

ACCORDING to an announcement made by Paul Van Wagner, vice president in charge of sales of Copperweld Steel Co.'s Wire & Cable Division, Avon W. Conrad will be placed in charge of sales operations in Minnesota, North and South Dakota, upper peninsula of Michigan and the upper portion of Wisconsin. He succeeds John J. Healy, who has been promoted to manager of sales of Copperwield's newly-organized Brake Drum Division.

Mr. Conrad is a native of Indiana and received his education in Chicago. In 1940, he joined Copperweld Steel Co. Several years later, he was

(Please turn to page 94)



You can carry Type 60A as easily as a pail—even swing it—yet you won't hurt the stub. A new, rigid stub guard takes the strain until terminal is mounted—can then be quickly removed. To install, all you do is fasten the detachable bracket to the pole with lag screws, hang the terminal on the bracket, and tighten four bolts. Moistureproof cable joint and terminals, heavy zinc cover, porcelain faceplate and rubber insulation insure trouble-free service. Save time, bother, repairs—order Type 60A today!

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SA-53.....16-pair
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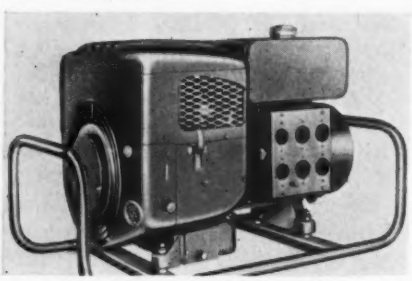
THE BUYERS' GUIDE and NEW PRODUCTS' SHOWCASE

For complete information on the products and services described in this department send in the coupon which appears on the opposite page. If you do not see a listing of the products and services that you are interested in, write BUYER'S GUIDE, 7720 N. Sheridan Road, Chicago 26, Ill. The information will be furnished quickly and without charge to telephone industry members.

FURNACE: — The Insto-Gas Corp. has announced a new addition to its line of furnaces. This new melting furnace is called the "Jumbo." When equipped with an 11" guard and a 10" melting pot, the "Jumbo" provides up to 120 pounds of hot metal in 10 minutes, and with a 14" guard and 12" melting pot, the "Jumbo" will melt up to 200 pounds of metal in 15 minutes. The "Jumbo" is readily portable and burns without producing fumes, smoke, grease or soot. The illustration shows the new Insto-Gas Jumbo furnace with melting pot, service hose and No. 18 Insto-Gas cylinder. For complete information, Check New Product 470.



ELECTRIC PLANT: — A new, 180-cycle, gasoline engine-driven electric plant, designed to operate high frequency electrical work tools, has been announced by D. W. Onan & Sons Inc.. At unity power factor it provides 5,000-watts of A. C., 230-volt, 180-cycle, 3-phase power or 3,000 watts, 230-volt, 180-cycle A. C. plus, 2,000 watts, 115-volt D. C.

Model 5CK-185M provides independent power for 180-cycle electric tools where no standard power is available for conversion. The unit is portable. It is powered by the lightweight Onan "CK" two-cylinder, 4-cycle, air-cooled gasoline engine. Overall dimensions: Length 35", Width 23-1/2", Height 23-1/2", Weight 270 lbs. Standard equipment includes a mounted 4-1/2 gallon fuel tank and a carrying frame. The unit is manually started. For complete information, Check New Product 471.

NEW CIRCUIT BREAKER: "Mini-Breaker" is a new permanent type circuit protective device that fits like a fuse in any standard Edison base fuseholder delivering up to 125 volt A. C. service. It requires no additional equipment and no special wiring when applied to branch or main circuits of corresponding 15, 20, or 30 ampere ratings. Anyone can install it in a matter of seconds, and anyone can restore electrical service simply by pressing in and releasing its shock-proof reset button.

While similar in size to the fuse it is designed to replace, "Mini-Breaker" is actually a precision-built thermally actuated circuit protective device consisting of 25 parts self-enclosed within a special tamper-proof insulating case. In operation, the new device safely interrupts excessive overloads and short circuits, tripping instantly on "shorts," but with a built-in time lag to handle temporary starting loads and line surges. Although service can normally be restored within 10 seconds after an interruption merely by pressing in and releasing the reset button, "Mini-Breaker" is 100% trip-free. That is, it positively will not maintain a circuit that has not been cleared of the condition that caused the interruption. Any attempt to reset the device against an overload or "short" only results in increasing the speed of tripping. — For complete data, Check New Product 472.

NEW PORCELAIN ENAMELS: — Porcelain Enamel Finishers, 3221 W. 30th St., Chicago, Ill., recently announced the development of special new acid resisting porcelain enamels for use in various communication applications.

Ray Gutman, vice president of the firm, stated the new enamels were designed especially to resist atmospheric weathering to which these signs are exposed under service conditions. Communication firms, he said, are expanding the use of porcelain enamel identification markers for mounting on poles as a simplified means of locating power failures and other service breakdowns from the air. This has speeded up repairs and cut repair costs. The special characteristics of the porcelain assures positive pole identification. The enamel will not fade or wear away with time. — For complete information, Check New Product 473.

ROTARY BROACH: — Improved to meet new requirements of industry, the tool illustrated has been developed to a point where it gives excellent results in practically any material. Holes may be finished to an ac-

curacy of + or — .0001, and the final surface finished produced will generally be from 10 to 40 R. M. S. In many instances these tools have eliminated grinding, honing and lapping operations.

According to the Shearcut Tool Co., Rotary Broaches remove metal by a true shear-cutting action, which forces the chip being removed ahead of the tool, eliminating any chances of the chip scarring the hole being finished. Made from high speed steel, the Broaches are completely ground from the solid after hardening. The tool is made with high spiral or helical cutting flutes, sharpened on the ends and when pressure is applied to the tool as it rotates, a true shearcutting broaching action occurs which produces chips that resemble steel wool in appearance and texture. The cutting edges of the tool form a circle, and the tools may be used to finish holes which have previously had keyways or splines formed in them. — For complete data Check New Product 474.

TESTER: — A combined ohmmeter and leakage tester has been announced by the Southwestern Industrial Electronics Co. The Model C-3 Resistance Meter is a compact, portable instrument designed for production testing of transformers, condensers, etc., with a useful range of 1 ohm to 1 million megohms. The four ohmmeter ranges are powered by a 1-1/2 volt battery. The six megohms ranges apply a maximum of 105 volts to the unit under test, providing a quick and accurate indication of insulation resistance or dielectric leakage. The accuracy is plus or minus 3% of full-scale deflection for all ranges except the highest megohms range which is plus or minus 5%. — For complete data Check New Product 475.

ADVERTISING, Directories — *General Telephone Directory Co., 604 Pine Ave., Long Beach, Calif., and 185 N. Wabash, Chicago, Ill.*—[ADV. 1]

BELTS — CLIMBERS — COMPLETE LINEMEN'S EQUIPMENT, *W. M. Bashlin Co., Bashlin Bldg., Grove City 1, Pa.*—[ADV. 2]

BELTS — CLIMBERS — PLIERS — SAFETY STRAPS — CONSTRUCTION TOOLS. *Klein & Sons, Mathias. 3200 Belmont Ave., Chicago 18. Ill.*—[ADV. 3]

BOOTHS—Acoustic Telephone — *Sherron Metallic Corp., 1202 Flushing Ave., Brooklyn 6, N. Y.*—[ADV. 4]

BRUSH & WEED KILLERS — *Thompson manufactures many types of brush and weed killers. Write for helpful information on specific problems. Thompson Chemicals Corp., St. Louis 3, Mo.*—[ADV. 5]

CABLE, All Plastic, Aerial, Duct, Direct Burial, PBX, Switchboard. — *The Ansonia Electrical Co., Ansonia, Conn.*—[ADV. 6]

CORDS, Switchboard, Instrument and Operators —*Commercial Cord & Supply Co., Inc., 26 Main St., Clifton Springs, N. Y.*—[ADV. 7]

CORDS, Switchboard & Telephone — *Runzel Cord & Wire Co., 4727-31 Montrose Ave., Chicago 41, Ill.*—[ADV. 8]

ELECTRIC HOT WATER HEATERS. *Thermostatically controlled for any hot water heater, Vulcan Electric Co., Danvers 17, Mass.*—[ADV. 9]

FURNACES — For quickly and economically melting lead and paraffin — *Mutual Liquid Gas Equipment Co., Inc., 3600 W. Imperial Highway, Los Angeles, Calif.*—[ADV. 10]

INSULATORS, Porcelain — *Porcelain Products Inc., Box 300, Findlay, Ohio.*—[ADV. 11]

LIGHTWEIGHT PULLERS — *Coffing Hoist Company, 800 Walters St., Danville 5, Ill.*—[ADV. 12]

PIPE PUSHERS — *Giant Manufacturing Co., South 6th St., at 12th Ave., Council Bluffs, Iowa.*—[ADV. 13]

POLE HOLE DIGGERS — For derrick mounted trucks. *Tele-E-Lect Products, Inc., 9613 Minnetonka Blvd., Minneapolis 16, Minn.*—[ADV. 14]

POLES, Southern Yellow Pine — *Colfax Lumber & Creosoting Co., Inc., P.O. Box 23, Pineville, La.*—[ADV. 15]

CANVAS CURTAINS: — Impregnated, flame-resistant canvas curtains and blankets that can be hung to form inexpensive booths to screen off dangerous operations are now being offered by Eastern Equipment Co., Inc., Willow Grove, Pa. The curtains and blankets afford complete protection for workers near arc welding and other operations where arc flash, molten splash, flying chips, scale, etc. are produced. — For complete data Check New Product 476.

POLES, Southern Yellow Pine — *Taylor Colquitt Company, 290 E. Main St., Spartanburgh, S. C.*—[ADV. 16]

POLES, Southern Yellow Pine — *Texas Creosoting Co., Orange, Texas.*—[ADV. 17]

PROTECTIVE EQUIPMENT — *Reliable Electric Company, 3145 Carroll Avenue, Chicago 12, Ill.*—[ADV. 18]

REBUILT TELEPHONE & SWITCHBOARDS — *Telephone Repair & Supply Company, 1760 Lunt Avenue, Chicago 2, Ill.*—[ADV. 19]

TRUCK BODIES — *Highway Trailer Co., Edgerton, Wisc.*—[ADV. 20]

WIRE, Insulated — DATED DROP WIRE — Neoprene or Weatherproof — *Alphaduct Wire & Cable Co., Milltown, N. J.*—[ADV. 21]

WIRE, Insulated Drop and Bronze or Copperweld — *Acorn Insulated Wire Co., Inc., 36 Freeman St., Pawtucket, R. I.*—[ADV. 22]

WIRE, Telephone, for all inside and outside uses — *Whitney Blake Co., New Haven, Conn.*—[ADV. 23]

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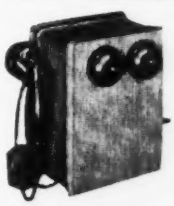

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Avon W. Conrad

advanced to office manager in Chicago. During World War II, he served two and one half years in the U. S. Army. In 1949, he did sales contact work for Copperweld in Chicago and in Northern Indiana. Soon after that, he was given the territory of Iowa, Nebraska, Wyoming and Colorado. At a later date, Mr. Conrad will make his headquarters in Minneapolis.

Robert E. Winslow will cover the states of Iowa, Nebraska, Wyoming, and Colorado. He has been doing field engineering for Copperweld ever since graduating from Penn State in 1950. One of his assignments has been the supervision of deep grounding demonstrations throughout the United States. This work has given him considerable experience in the field of grounding protection.

Phonevision Devises Non-Phone Unscramble

NEW SYSTEM has been devised for phonevision to eliminate the necessity of using telephone lines for the transmission of the decoding key information. Film showing each step in the latest adjunct to Zenith's "box-office" for TV was demonstrated in Hollywood by Pieter E. van Beek, assistant to Phono's president, Commander Eugene McDonald.

Second basic system was developed to give pay-as-you-go special tele-attractions greater operating flexibility, thereby extending the service to set-owners who have no telephone. Under the new setup a subscriber is issued an identification number with the help of which he can purchase the necessary decoding information from vending machines located in drugstores or shopping centers. Subscriber merely dials on the vending machine his own identification number, and after inserting the required subscription fee, the machine issues a small card carrying the decoding information in the form of a five or six-digit number.

Connected with the subscriber's television set is an "aircode translator," which is also equipped with dials by means of which the subscriber dials the decoding number which he purchased from the vending machine. This automatically clears up the scrambled image on the screen. Original Phonevision system required telephone lines to unscramble the flickering picture.

New 'Brain' Joins Army Center

THE ARMY recently put into operation in Chicago a revolutionary new "electric brain" machine to receive and transmit messages.

It can send or receive messages to and from any part of the Army's vast communications network.

But most amazing is the way the automatic tape teletypewriter receives and then channels out messages to other destinations, without aid of personnel.

The only men needed to handle the two long rows of machines are those to keep an eye on the controls and to change tapes when they are used up. Even bells ring to warn when a tape needs changing.

There are 20 incoming lines. When the message is received the address alone is sufficient to cause proper electrical circuits to be made to send the message to its proper destination within the 5th Army's communications outlets.

If a message comes say for Channel 5, which might be an Army office 20 miles from headquarters, and Channel 5 is busy, the ingenious machine "stores" the message, then when the channel is free, automatically starts sending it.

The system was engineered by the Automatic Electric Co., Chicago. It took 10 months to install and test at the Army headquarters at 1660 E. Hyde Park. Research to perfect it has been continuous since World War II by both military and civil engineers.

STROMBERG | CARLSON

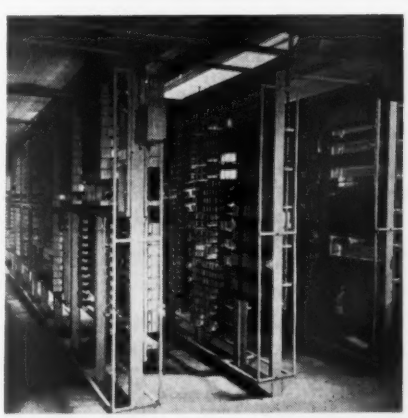
transmitter

Published by the makers of famous XY Equipment

THEY DARED TO BE FIRST!

The Kittanning Telephone Company

Once a new trend has been established, it is a natural thing to follow the pattern which has proved successful. But someone always has to be first! This is the story of the company which installed the first XY Dial Exchange in the U.S.A. — at Worthington, Pennsylvania.



Trunk wing in the XY equipment room.

Mr. K. B. Schotte, Jr. is Vice President and General Manager of the Kittanning Telephone Company; his group serves a good-sized territory just north of Pittsburgh, with 17,590 stations in October, 1952, including those in Worthington. "Ben" Schotte grew up in the telephone business — his father, Karl B. Schotte was one of the original founders of the Kittanning Telephone Company in 1896 — and he fully intends to be in the business for many years to come. With his own future in mind, Mr. Schotte began a dial conversion program in 1940 by installing Stromberg-Carlson Relaydial at East Brady.

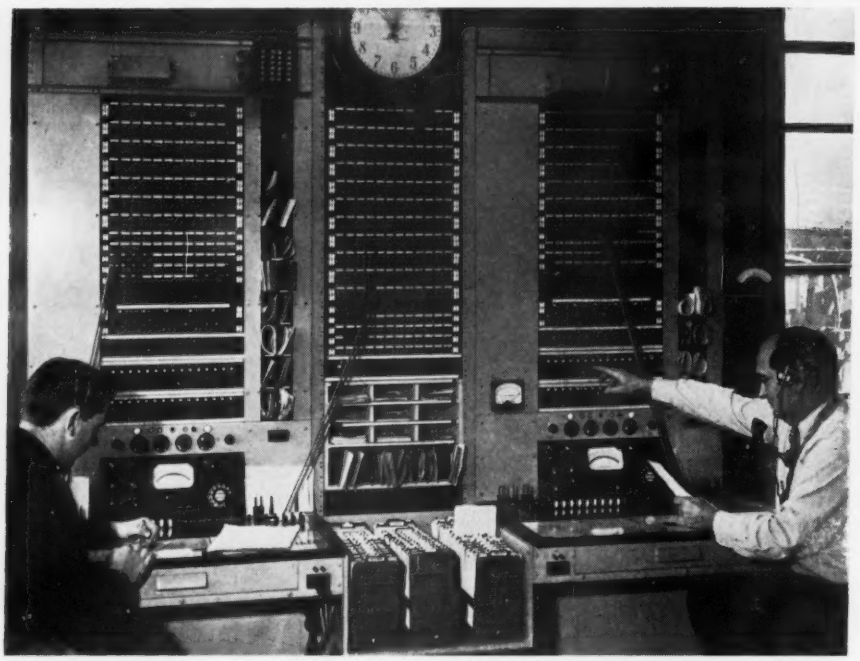
The savings in operation cost and the faster service provided by dial, led to the decision to move progressively into other exchanges. The principal manual switchboard at Kittanning was loaded — relief was essential. It was decided to accomplish this by cutting off some of the fringe areas and establishing these as unattended satellites. Mr. Schotte came to Stromberg-Carlson with Francis ("Bo") Young, his equipment supervisor, and presented the problem to Joe Ottalagana, Jess Snyder and other members of the Engineering Department. Here they saw models of the Stromberg-Carlson XY System being tested in the laboratory. Both men were impressed with the simplicity, versatility, and ease of expansion of this dial equipment.

Historians differ as to the exact details of what followed: the net result was that Mr. Schotte was willing to be the first, laying his future alongside the reputation of the manufacturer and the men he had come to respect through association over the years. Stromberg-Carlson XY was ordered for Worthington, Rural Valley and Elderton.

Two large exchanges to the south were outgrowing their capacity and needed modernization. By year-end

Part of the 16-position toll room at Kittanning.

STROMBERG-CARLSON transmitter



Test panels in the Kittanning office. Man at right is Francis Young, Equipment Supervisor.

1949, Apollo had grown from 1,400 to 1,800 stations in three years; Leechburg, which was also a toll center, had a 35% increase in station count over the same period. The pioneer XY exchanges had proved their worth, both in the Kittanning service area and elsewhere in the country. As fast as practicable, orders were placed with Stromberg-Carlson for XY Dial in these and the remaining exchanges of the Kittanning Telephone Company.

Human interest stories abound in any large conversion program. At Apollo the new building was erected around the old. As work progressed, the manual board *and the operators* were jacked up successively higher, working under a tarpaulin at roof level in the final stages, until the cut-over released them from a precarious perch.

At Ford City, eight hours after the midnight cut-over, your editor arrived to take pictures. The exchange building was open; almost all 850 lines were in use by subscribers anxious to try out their new dial service, but no manager. A call to his home found him comfortably enjoying breakfast. He said he'd come over if needed for the pictures, but, "The darned stuff takes care of itself! I got bored waiting around last night for something to happen."

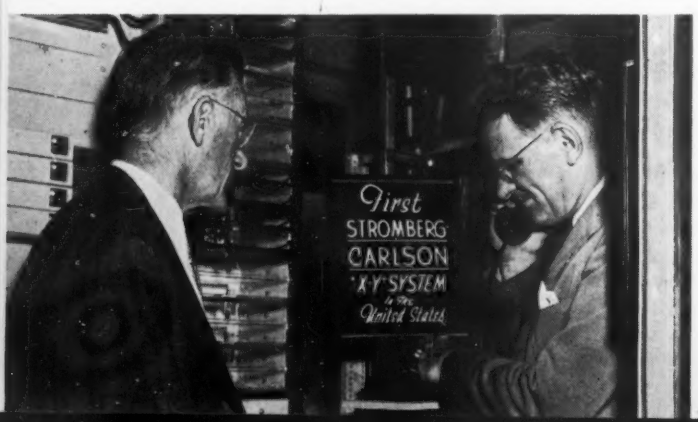
As the smaller exchanges were converted to unattended dial, operators were assisted in finding other work. Before Kittanning was converted, some girls were needed there to handle the expanding service. Others have become PBX operators in local offices. Since Kittanning went XY, the increase in toll business has provided a few extra jobs.

What's ahead for this company? Kittanning itself is the county seat and headquarters for several industries — the Pittsburgh and Shawmut Railway, West Penn Power Company, Linde Air Division of Union Carbide and Carbon Company. Also the Pittsburgh Plate Glass Company and the Eljer Company have their largest plants in nearby Ford City, while the surrounding hills pour their wealth of coal into the steel mills of the area. Normal growth, of the pattern of the last five years, will add approximately 2,000 lines a year within the total group.

Most exchanges have been planned with this growth in mind. At East Brady, however, growth has overtaken the ability of relay equipment to expand economically. XY Dial is now being installed there, and the relay equipment is being moved to a newly acquired exchange with a stabilized pattern of growth.

K. B. Schotte, General Manager of the Kittanning (Pa.) Telephone Company.

The team of "Ben" Schotte, "Bo" Young, Gordon Nelson in charge of XY equipment, Dave Doverspike, Plant Superintendent, Miss Hazel Campbell, Traffic Supervisor, and Miss Helen Painter, Commercial Supervisor are mighty glad today that in 1947, "they dared to be first."



Mr. Schotte places a test call, as Dr. R. H. Manson of Stromberg-Carlson looks on.

STROMBERG-CARLSON transmitter

Nylon Covered Switchboard and Instrument Cords Wear Longer

by Louis Droel, Telephone Apparatus Engineering

Many new materials have become available and improvements have been made in old materials used in telephone apparatus. To evaluate some of these improved materials, tests were started in October 1949, at Stromberg-Carlson with switchboard and telephone instrument cords on which an outer covering of nylon replaced the usual cotton covering, and the individual conductors were insulated with a plastic material, polyvinyl chloride.

Laboratory tests showed that cords with this outer braid of nylon had much greater wear resistance than the usual cotton covered cords. This was especially true of switchboard cords, for which the tests for abrasion resistance and flexture indicated an increased life expectancy of at least three to one for nylon cords over cotton covering.

Using polyvinyl chloride insulated conductors gave the cords a much higher moisture resistance. After exposure to 95% relative humidity for 96 hours, the insulation resistance of the plastic covered conductors did not drop below 1500 megohms compared to an average insulation resistance of 6 megohms for ordinary cotton covered conductors. This greatly improves moisture resistance, eliminates the need for waxing the switchboard cords and results in better looking cords that are cleaner to handle.

Since laboratory tests, although extremely valuable in developing new products, cannot exactly duplicate all field conditions, additional tests of switchboard cords in actual service were performed. In September 1950, the P.B.X. at Stromberg-Carlson was equipped with the new cords. These cords remained in service until May 1951, when the manual switchboard was replaced. During these nine months of service no failure of the switchboards occurred, and they apparently would have given many more months of excellent service. The operators were especially pleased with the clean and pleasant feel of the cords, and the smooth and easy manner in which they restored in the plugboard.

To obtain additional field experience, the new switchboard cords were also installed in a Toll Board in Florida and in a busy Manual Exchange in Rochester, New York. Again the cords performed excellently, giving far greater service than the cotton covered cords they replaced. With such very good results, full scale production of nylon covered switchboard cords was begun in January 1952. With the introduction of the 1400 Series Telephone last April, nylon covered handset and line cords became standard.

The combination of greatly improved abrasion resistance, better appearance with no fading, lightness and flexibility, and resistance to fungus growth provided by the outer braid of nylon, and the very much greater insulation resistance (especially in humid climates) provided by the polyvinyl chloride insulation on the individual conductors, results in switchboard and instrument cords that really provide the excellent service required of today's telephone apparatus.

MEET
Harry Bruckart

"Can't you talk about my men and let it go at that," was Harry Bruckart's reply when I asked for his story.

It's true that he prefers to be known by the work which comes out of his department; this is written up on a following page. But back of his present position as Assistant Chief Telephone Engineer at Stromberg-Carlson is an interesting experiential background.

Harry may have had his present job in mind when, as a boy in Lititz, Pennsylvania, he not only took electric motors and steam engines *apart*, but put them back together again! He says it was just fun.

His first job was quite a shock. Fresh out of Ohio Northern, he answered an ad which led to a position as managing operator of a hydro-electric station. Here he had a couple of close shaves with 13,000 volts; this convinced him that 24 and 48 volts suited his appetite better.

In 1919 Harry joined the Automatic Electric Company, starting in the field as an installer on the Keystone Exchange in Philadelphia. After this experience he worked for many years on manual and dial systems, proposals and sales assistance. He *knows* what makes a dial system tick.

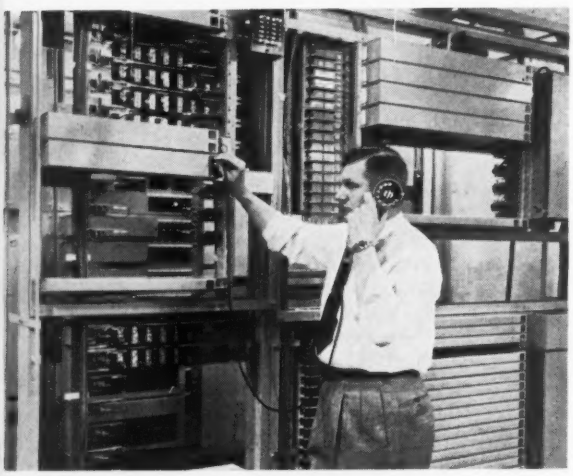
Traffic engineering lies closest to his heart. He pursued this for four years with the Home Telephone Company at Fort Wayne, Indiana.

There was also a period when he helped to develop new power equipment for the farm, as sales engineer for the New Holland Machine Company.

Since 1946, when Harry came to Stromberg-Carlson, his story is that of leader of the Systems Engineering Department, during the period when the Stromberg-Carlson XY System has attained its present national recognition.

Harry is married to Irma Pence; and has one son, Philip. Outside of his work he prefers fishing to anything else, but also dabbles in photography.

STROMBERG-CARLSON transmitter



Mr. Bechtel Winger placing a test call.

Another Indiana Town Goes XY

Sweetser, Indiana, cut over to Stromberg-Carlson XY Dial service on November 1, 1952, fulfilling the personal ambition of Mr. Bechtel Winger, President of the Sweetser Rural Telephone Company.

When Mr. Winger assumed responsibility for this company in 1947, the telephone business was new to him. But he was sure of one thing: Sweetser was a growing town in one one of the best parts of the country — it deserved the best in telephone service.

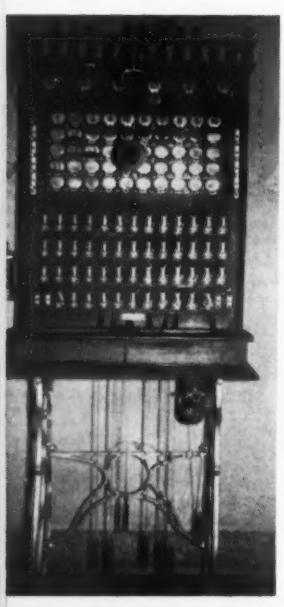
This was not practical except as a complete change-over to dial operation. While the outside plant was being readied, careful study was being made of available types of equipment to see what would best fit the needs of this community. Like so many forward-looking companies, the preference was XY. When Mr. J. R. Thompson, Stromberg-Carlson representative, took Mr. Winger to nearby Plymouth, Indiana, to see a large XY system in operation, he was impressed particularly with the enthusiasm shown there for the equipment.

Financing the modernization program was a stumbling block until the Stromberg-Carlson Credit Corporation came to his aid. Mr. R. D. Shoemaker, Credit Corporation field engineer, assisted with the survey, specifications and details of the loan.

Sweetser now provides modern dial service to 550 subscribers, and looks with confidence to the eventual growth of both company and town.

At Year-End 1952 There Were 462 Stromberg-Carlson XY Dial Systems installed or on order in 39 states.

Is this the oldest Switchboard Photograph in existence?

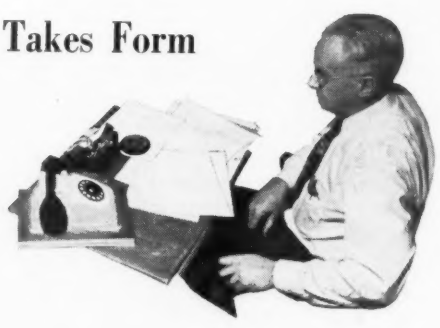


Search your files, take out the old photograph albums or tintype collection! Can you find a picture of a switchboard *used in your exchange* which ante-dates this 1896 board from Navasota, Texas? The TRANSMITTER will gladly publish your picture, with any explanatory copy you submit and return same in good condition. Until proved wrong, Navasota, Texas, stands as the winner. The race is on!

THE NEW 1400 TELEPHONE

An Idea Takes Form

Sidney Proctor is an expert craftsman in model making. In the Stromberg-Carlson model shop, where he has worked over 22 years, Sid tested the many ideas as they were suggested by giving them form and substance. Here we see Sid working on a model telephone, trying out a new use of the original design.



Fred Van Almelo is a mechanical engineer at Stromberg-Carlson by profession, and an artist by inclination. This combination of abilities made it natural for Fred to contribute largely to the styling of the 1400 Series Telephone. He is shown above with the clay model which was used in creating the mold.

STROMBERG-CARLSON transmitter

Wiring the XY Shelf is an intricate job for deft fingers.

FACTORY TRIP

XY Shelf Assembly

No wonder these girls look pleased! Their suggestion for a better wiring scheme has been accepted.

During the last several months your editor, George Forbes, has visited with you in some of the production departments at Stromberg-Carlson. This month he introduces you to some of the people who make XY Shelf equipment, and lets you see how it's done.

If you have been here before, you'll still be surprised! You remember the Circuit Plate Department which we visited last month? They were able to expand production by lengthening out the line.

Would you know where that wire goes? Experienced operators are on hand to help newcomers to XY Shelf department.

Jack Pilling, department foreman, explained to me that the increased demand for Shelves is being met by a second shift which will be increased as soon as operators with the required skills can be trained.

Jack and his boss, Howard Strassner, have worked wonders; they quickly took advantage of several thousand square feet of space recently made available in an adjoining building, and transferred some production lines bodily — the XY Switch is one — to provide more working space for those remaining. You can't do this without a few growing pains, but already more equipment is reaching the shipping floor, and that's what counts!

XY Shelves, like circuit plates, are wired up completely by one individual and sent down a traveling conveyor to common test booths. I was told that this is the most practical way, because the shelves as shipped out must be as flexible as the customer's requirements.

Yet behind this flexibility in wiring is a marvel of standardization. Some of you know Bernard (known to most as "Shorty") Simonson, supervisor of equipment design, who in 1947 developed standard shelf patterns that drop into place in the same manner as a boy's construction set. He must have done a good job, because no specification has come up yet which did not fit this original pattern.

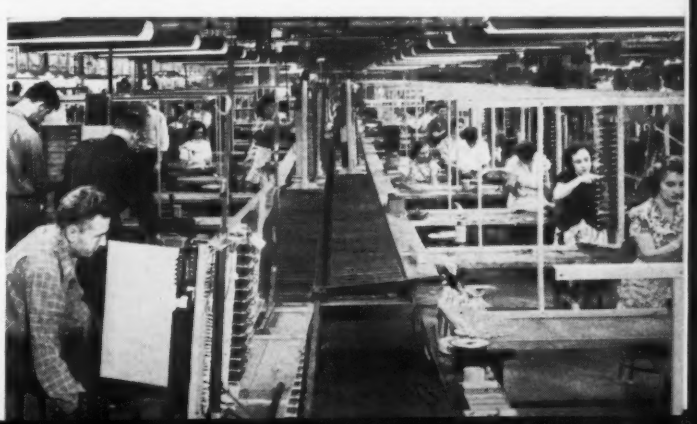
On the production line you notice several different sizes and shapes, some with continous vertical wire banks — the Finder, Connector and Selector shelves all using the same interchangeable XY Switch — and some with just fuse panels and terminal blocks. These latter are Trunk shelves, also used for reverting call, pay station, information and intercept circuits.

I asked supervisor Joe Lochner if all the wires on these shelf cables are used. He pointed out that wiring for the complete possibilities of the shelf are there; that actual connections according to expected use are made, and other wires conveniently tied back so as to be available if and when they are needed.

Superintendent William Strohmeier pointed out the advantages of having the installer's wiring terminate directly on the shelf jacks for incoming wires. This eliminates many soldered joints and removes a very real potential source of trouble.

Speed is a minor consideration in a job of this complexity, requiring a deft touch and extreme care with the soldering iron. Those who have become particularly adept act as "floaters," helping to train the newer operators and constantly inspecting the work in progress, before final testing.

Next month join us as we see what's new in another department.



This production line was just too big for the camera to cover! Testing in left foreground.

STROMBERG-CARLSON *transmitter*

Telephone Systems Engineering

Dial and Manual Telephone Systems Engineering Group

Harry Bruckart is proud — and rightfully so — of the group which has been assembled to translate ideas into working telephone systems. This team is unique in one respect: these men have been unfettered from having to work within existing manufacturing limitations or the necessity of conforming to previously established patterns — often outmoded — in the field.

Instead, they could draw on their experience in dial telephony to create a new system, built around the XY Switch and the bare wire bank multiple. In doing so, they were able to look ahead and take advantage of the advanced research which finds modern means to solve today's problems.

Double-sided, space-saving mounting arrangements; a modernized unit-type design of power equipment; a more efficient and flexible terminal-per-station system; lightweight shelves easily installed by two men — these are only a few of the innovations made possible when tradition becomes a guide instead of a limitation.

This is no one-man show. Responsible leaders who handle the work in the various sections are encouraged to seek out fresh ideas, with the belief that in a dynamic industry there will be better solutions on the horizon. These group leaders are shown at the right.

H. M. Bruckart and Jean Kouleski, secretary

E. J. Dowejko
Dial Systems

W. M. Schultz
Manual Systems

R. W. Jones
Circuit Design

R. T. Williams
Power Boards

B. E. Simonson
Equipment Design

C. L. Stowe
Cable and Layout

J. D. Confeld
Sales Proposals

Circuits, Cables and Power Section

Equipment Engineering

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THE BACK OF THE BOOK

By JOHN G. REYNOLDS

"Double Hex"

JAPANESE TELEPHONE company employes have a subtle way of putting the double hex, with accompanying whammies, on American citizens moving to Tokyo. Lucky numbers in the Orient are odd numbers — *three*, *five* and *seven* being the *luckiest* of all. *Even numbers* are *unlucky* with special emphasis on *four*, which means death, and *eight*, which means misery. The word for four is "shi." That is also the word for death.

A grinning, bowing, self-effacing Japanese informed an American correspondent that he had selected a very excellent number for his new telephone.

"I searched the lists of unused numbers," he said, "and have selected one for you with great care — 08-4340."

In other words — *zero misery, drop dead, misery, drop dead, zero.*

"We always try to give Americans a number starting with 48," he said. (That seems to be the unluckiest combination of all.)

A quick run down the telephone list shows the American embassy with 48-4111. The United Press has 20-4448 and the Chicago Daily News 30-4488. Another American reporter is the proud possessor of 95-4848.

Almost every American in Tokyo has a four or an eight in his telephone number. If he hasn't, he probably bought the telephone from a Japanese.

The influential Japanese establishments have all the lucky numbers. The Imperial hotel is 57-3151. That is all odd numbers and about as lucky as you can get. Jiji Press is 57-7151.

Most Americans are either uninformed about fours and eights or don't care, just as the Japanese believe that 13 is a very fine number.

"The Phone Catches It"

ACCORDING to the *Detroit (Mich.) Free Press*, when Detroiters get angry, they like to take out their wrath on their telephones and many a telephone has been ripped out by its roots during a family spat.

One husband got so enraged at his spouse that he stomped down to the basement and slashed the lead-in wire into tiny pieces.

Then, in a final burst of passion, he raced out and hacked the cable leading from a pole to his house.

Why does the telephone catch the abuse — and not the television set, for instance?

Repairmen told the *Free Press* it may be that a housewife gets to consider the telephone her most prized possession, an escape for her lonely daytime hours.

Thus an inflamed hubby could consider he was "getting even" by smashing this source of feminine pleasure.

But the more likely reason, repairmen suspect, is that in the heat of battle one contestant races to the telephone to "call mother . . . or the police."

Then is when Mr. Bell's legacy gets the works.

Repairmen feel, however, that the mere presence of a telephone in the house has spared more than one wife from a black eye — and in the long run preserved a marriage.

"When husbands stand there with the severed cord dangling in their hands, they must suddenly become filled with remorse," one splicer commented.

Repairmen never ask indiscreet questions when summoned to patch up a problem, he explained.

"But as soon as we reach the scene of the quarrel, the guilty party usually offers a flood of sheepish apoligies and explanations," the repairman went on.

"We tell him not to be upset . . . that we get these kind of calls all the time.

"He looks at his wife and all is rosy again."

Except for family misunderstandings, home telephones are relatively free from breakage.

Junior sometimes experiments with a pair of scissors on any cord handy.

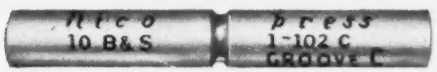
But in the course of a year, only three telephone instruments and three cords out of every 100 have to be replaced.

"We think this is a remarkable testimonial to the respect which Detroiters apparently have for their phones," said a Michigan Bell spokesman.

"JOB PROVEN"

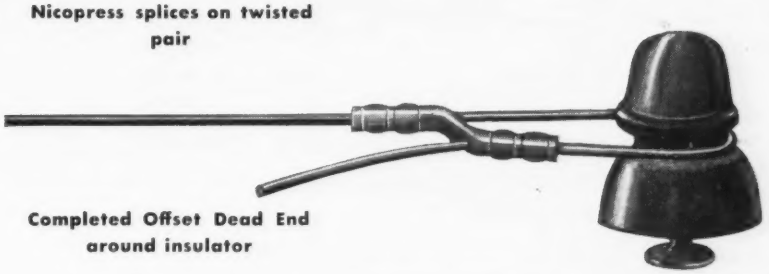
By Linemen The Country Over

Nicopress Tool for Compressing Sleeves

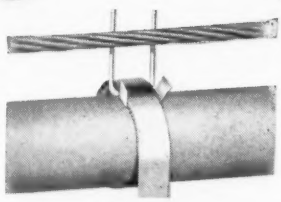


Nicopress line wire Splicing Sleeve

Nicopress splices on twisted pair

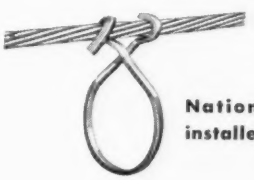


Completed Offset Dead End around insulator

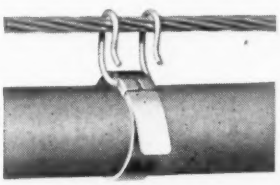


National Adjust-A-Strap, partially installed. Notice split buckle to facilitate wrapping zinc strap around cable

Nicopress Reducing Sleeve splice on wires of different sizes (before compressing)



National cable ring installed on messenger



National Zinc-Wrap partially installed

Nicopress Repair Sleeve used to replace defective old style joints

Ask Your Jobber

The National Telephone Supply Company

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In keeping track of the days, weeks and months of 1952 as the year unfolded, you employed an accepted standard of measurement. As 1953 progresses, you'll find yourself relying upon the same standard of measurement.

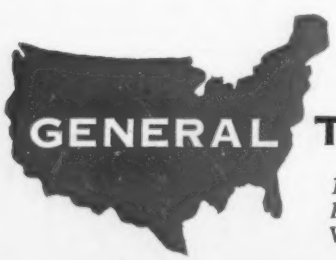
In nearly every field of endeavor, we find that there are accepted standards of measurement by which progress or performance is gauged.

With this fact confronting you, isn't it rather difficult to understand why so few telephone companies take advantage of the standards of measurement which have been established to evaluate the true worth and maximum Potential of telephone directories?

1953 can be the year that your company begins to realize maximum net profits from telephone directory operations. Resolve right now that you will invite us to make a study of your current telephone directory and report our findings to you without any cost or obligation whatsoever.

As a result of this study, you may find that we are able to develop untapped sources of income for your company that will provide you with extra operating revenue.

What's ahead for 1953? Opportunity! All you have to do is take advantage of it.



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